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碩 士 論 文

關於動態能力的測量

On the Operationalization of Dynamic Capabilities

研 究 生：莫尚

指導教授：姜真秀

中華民國 101 年 6 月

National Chiao Tung University

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Thesis

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ABSTRACT

In this paper, we construct a universally applicable measure by which the dynamic capability of any one firm, for a given period, may be expressed and analytically compared to that of others in the system, based on readily available, critically unambiguous, financial statement data. In order to express the capacity for dynamic capability mathematically we employ the beta coefficient of a simple linear regression equation that examines the covariance of a target firm's pre-tax operating margin change against the aggregate mean change of pre-tax operating margin for all companies within the system. Utilizing the net change in pre-tax operating margin for the system, we may then calculate the change in pre-tax operating for a target firm that may be ascribable to the function of this capacity for dynamic capability. We contend this last measure constitutes a measurement of the effectiveness of dynamic capability on firm performance for a given period. We validated the proposed measurement with about 2000 public companies in the US during 2002-2011.

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For my mom, Rae Catherine Mouton.

1935-01-01 ~ 2010-11-17

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Introduction:

In the years ensuing the formative papers of Teece and Pisano (1994) and Teece, Pisano and Shuen (1997), an ever-increasing body of literature has grown in the field of dynamic capability. However, while there has been some measure of consensus and synchronous development surrounding the definition and characteristics of the subject, attempts to construct a universally applicable and objective measure by which the dynamic capability of any one firm may be expressed and analytically compared to that of others has met far more limited success. We would address this issue by the development of a new operationalization that is based on readily available, critically unambiguous, financial statement data. To do so, we first employ a linear regression to calculate the portion of a target firm's pre-tax operating margin change that may be attributed to environmental dynamism or systemic[1] influence. Thereafter, by solving for the target firm's change in pre-tax operating margin in relation to the entire system over the period, we can show conclusively the level of dynamic capability for the target firm over the said period.

[1] While our choice of which firms comprise the system for our study is discussed in more detail later, we feel it important, even at this early stage, to note that systemic influence may be defined as the network level interplay of all firms grouped by an applicable secondary variable (the effect of the firm on the system and the system both in aggregate and in parts on the firm). In this regard, any number of secondary variables including geographical area, economy, political economy, industry, technology and many others may prove apt for study. In our case we have chosen all firms publicly traded in the USA between 2002 and 2011.

Building from the basis of existing theory, we contend the operational capability of any firm is accurately expressed, through financial statement data, as its pre-tax operating margin. Furthermore, since dynamic capabilities are those that both modify or change operational capabilities, and do so in response to fluctuations in the system, we argue that the portion of a firm's growth or decline in operating margin that may be accounted for by the level of systemic exposure that firm has is an accurate reflection of its dynamic capability. In order to express this mathematically we employ a simple linear regression equation that examines the covariance of a target firm's pre-tax operating margin change against the aggregate mean change of pre-tax operating margin for all companies within the system. The beta coefficient of this equation represents the portion of change in operating margin that occurs as a result of the firm's level of concomitant exposure to and integration with the aggregate interplay between firms occurring at the systemic level.

Through the course of this paper we will show that the development of our indicator to measure for dynamic capability is not only necessary but also appropriate. In order to do so, we begin with an examination of the literature to date on the notion of dynamic capability and show that our conceptualization remains true to the ever-growing body of work already developed in definition of the term. We find that despite increasing complexity within the field on the nature, role, context, creation, and development of dynamic capabilities, such particularities do not detract from the fact that dynamic capabilities remain those that inform and modify the operational capabilities of a firm and

in as much, the effects of changes in dynamic capability may be seen in changes in pre-tax operating margin.

Furthermore, by examining empirical work already undertaken in the field we show that while several obstacles have stood in the way of development of a universal index from existing research, our model not only addresses these but also offers great benefit for future research, chiefly through its through widespread applicability. The most pressing of the issues arresting existing research is the subjective nature of indicators employed by researchers in the field, along with the limited samples and data utilized. The latter factor is symptomatic, in itself, of the want for a practical, objective indicator for dynamic capability that may be readily constructed from widely available data.

This paper will also illustrate the methodology we have followed in the development of our indicator. In many ways the strength of our operationalization lies in the fact that it is not only mathematically rather unassuming but also in that it may be derived from readily available SEC filings (in the case of listed companies) or regular financial data (for private firms). We finally discuss the results of our study and find proof that dynamic capabilities, when working to modify sound operational capabilities, indeed enhance firm performance. Moreover, we are able to show that the capacity for dynamic capability alone is not sufficient to result in guaranteed increases in firm performance.

From Definition to Operationalization

Our conceptualization of dynamic capability is born out of extensive review of the existing scholarly research on the subject. We have viewed these investigations from a different perspective in that we are more focused on the financial statement effects of dynamic capability, than on the antecedents or nature of these capabilities themselves. We find that from the very first definitions of dynamic capability as an extension of the Resource-Based View (RBV), our conceptualization finds material resonance in the existing literature however. To build our theory, we will first deconstruct the notion of operational capability. Thereafter, we illustrate the relationship between dynamic capabilities and operational ones and also highlight the importance of the connection between dynamic capabilities and environmental dynamism. We conclude this section with a brief examination of the relationship between dynamic capabilities and financial statement data.

Operational Capability:

Much like Teece & Pisano's seminal 1997 paper on Dynamic capability that first created scholarly interest in the notion (Teece, Pisano, & Shuen, 1997), our operationalization also finds its origins in an extension of RBV of the firm (Amit & Schoemaker, 1993; Barney, 1986; Makadok, 2001). The RBV explains the conditions under which a firm may achieve sustained competitive advantage as a result of that firm's resources and

capabilities. Resources in this case refers to "stocks of available factors that are owned or controlled by the firm", while capabilities refers to the firm's "capacity to deploy resources, usually in combination, using organizational processes, to affect a desired end" (Amit & Schoemaker, 1993). We assert that the authors' concept of "resources" counterparts the snapshot notion of a balance sheet very accurately, since the latter too reflects through a statement of assets, liabilities and equity, the summation of the "factors that are owned and controlled by the firm". In much the same way, the concept of "capabilities" proposed by Amit and Schoemaker, is at its core a review of the Income Statement. This conception of "capability" indicates the efficacy with which a firm may utilize the factors under its control to achieve the outcome of selling products and services for profit. The exercising of any of the firm's "capacity" through "deploy[ing] resources" is reflected in its income statement as either an increase or decrease in revenues and expenses, with resultant effect on the "desired end" – pre-tax operating margin. A firm's operational capability is thus accurately reflected in its pre-tax operating margin[2] performance, relative to its competitors and the nature and phase of the business. This concept of equivalence between the models of "resources" and "capabilities" with those of the Balance Sheet and Pre-Tax Operating Margin respectively, is our point of departure for explaining and measuring dynamic capability and it is critical to our

[2] It warrants brief mention that the non-operating section of the income statement is not subject to our understanding of dynamic capability. Since dynamic capability is the ability to change or modify operational capabilities, it follows that only income from operations be accounted for in our conceptualization. Consider too that non-operating activities are not sources of competitive advantage and hence not antecedents nor outcomes of dynamic capability

understanding of the term. Specifically we assert that the operating margin of the firm is equivalent to the concept of its operational capability.

However, while the RBV can be likened to the firm picking resources to best employ within a specific competitive environment, this view is too static to accurately capture the turbulent environment within which modern firms operate. Teece et al recognized this shortcoming and developed the very first definition of dynamic capability as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece et al., 1997). These two fundamental theoretical principles are crucial for our consideration:

1) Dynamic capabilities modify operational ones.
2) Dynamic capabilities arise as a product of environmental dynamism.

Dynamic Capabilities vs. Operational Capabilities:

Winter, writing in 2003, pays particular attention to this distinction between operational capabilities (he calls these "zero-sum" capabilities) and dynamic ones (which he refers to as "first-order" capabilities). He notes that dynamic capabilities are "those that operate to extend modify or create ordinary capabilities" and considers operational capabilities to be those employed to "earn a living by producing and selling the same product on the same scale and [to] the same customer population". Dynamic capabilities then are concerned

with changes in the product (or its production process), the scales of the operation or the market segments served (Winter, 2003).

Zahra et al corroborate this view when they refer to "substantive capabilities" as those used to solve a problem and dynamic capabilities as the "higher-level" capabilities that function to bring about a change in the former (Zahra, Sapienza, & Davidsson, 2006). To be sure, the exploratory nature of dynamic capabilities equates somewhat to March's exploration-exploitation view, in that dynamic capabilities are employed in the exploration of new opportunities, while operational capabilities are concerned with the effective exploitation of the existing resource mix (March, 1991).

For our conceptualization, recognizing that operational capabilities are those modified by dynamic capabilities, it follows that by measuring changes in pre-tax operating margin we are able to measure dynamic capability. Furthermore, by capturing the volatility of change (rather than simply change year on year) in pre-tax operating margins our indicator accurately takes the nature of these "higher-level", "first-order" or "explorative" capabilities into account. Changes in product or the production process are made in an effort to increase revenues, while they also incur costs in doing so; similarly increases in scale, or the exploration of new markets have the same effect. The manner and nature of these changes of "substantive", "zero-sum" or "exploitive" capabilities, in relation to the trends within the system as a whole, shows their effectiveness. (March, 1991; Winter, 2003; Zahra, et al., 2006). We contend that firms with a higher level of dynamic

capability then are those who are able to modify their operational capabilities so as to pursue maximum growth in pre-tax operating margin for a given period.

Dynamic capabilities and financial statement data:

There is a great focus in current literature on the various types of dynamic capability, so much so that we feel it necessary to include this section to show that irrespective of the nature of dynamic capabilities they are reflected accurately in the notion of changes to pre-tax operating margin (in response to systemic influences). Teece et al along with many others, expressly define dynamic capability as an ability or capacity, with a specific desired end (addressing rapidly changing environments), thus underlining the importance of strategic management in the exercise of dynamic capability (Barreto, 2009). For our own indicator, the importance of strategic management is correspondingly fundamental. The idea of "integrating, building, and reconfiguring internal and external competencies" is an expression of management's role in modifying a firm's objectives, changing its operational, financial and investment policies, developing programs and projects to achieve these objectives, and the allocation of resources to the above, all in interests of increasing returns (Teece et al., 1997).

Winter argues that dynamic capabilities are "a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness" (Zollo & Winter, 2002). They go on to define "routines" as "behavior that is learned, highly patterned, repetitious, or

quasi-repetitious, founded in part in tacit knowledge – and the specificity of objectives" (Winter, 2003). The authors' insistence on "operating routines" and "improved effectiveness" are acute demarcations. Since operating routines are in practice the summation of processes that draw in revenues and have concomitant costs (i.e. the components of operating margin); quite clearly the effects of change in these processes to bring about increased effectiveness must be reflected in changes to the operating margin of the firm. These changes in operating margin then result in increases or decreases in the performance of the firm as a whole. For our conceptualization this notion serves as reaffirmation of the locus of dynamic capability, firmly seated within the operational realm of firm activity. However, it bears mentioning, even at this early juncture, that effectiveness as used here, does not necessarily equate to increased operating income in currency terms alone. To be sure, a firm may even choose to have lower operating income in some cases (such as taxation benefits). Rather, effectiveness refers to how well the firm is able to increase its operating margin over a given period.

Echoing Teece et al, Eisenhardt & Martin find dynamic capabilities to be "the firm's processes that use resources – specifically the processes to integrate, reconfigure, gain, and release resources – to match and even create market change. Dynamic capabilities [they argue] are thus the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die" (Eisenhardt & Martin, 2000). As we have already noted, resources are analogous to the summation of the balance sheet while the income statement in turn, shows how these resources are reconfigured over time. Dynamic capabilities then, paraphrasing Eisenhardt

& Martin (2000), are those processes that the firm undertakes (and which are recorded on the income statement) that realign its resources (i.e. the balance sheet) to shape new market opportunities, face changes, challenge new emergences and deal with sudden endings. For illustration, a company may face a significant challenge to its market share (revenues) by the development of a disruptively innovative new product by a competitor. The company in response must defend its top line by developing new products or services (through greater expenses perhaps in R&D or in the acquisition of patents from another firm). Conversely, the firm itself may drive growth by developing innovations of its own. In another scenario, a firm might deal with new legislation that drastically increases raw material costs (expenses). Once again, to protect against erosion of operating income, the firm must act to realign it resources (assets and liabilities) to offset the expense increase and maintain profitability by perhaps vertically integrating its procurement process (capital expenditure) or by changing its product entirely (implying R&D or other costs). There are a myriad of different circumstances that can illuminate this point: A firm must protect its operations (operating income) by engaging in processes (that either increase or decrease revenues and expenses) and ultimately realign assets, liabilities and equity as reflected on the balance sheet. This realignment is reflected in turn in the way the firm is able to protect and grow its operating margin over time.

In summation, consider the excellent operationalization of dynamic capability, built by Pavlou and El Sawy, that captures much of the research to date into dynamic capabilities (Pavlou & El Sawy, 2011). They claim that (measurable) dynamic capabilities fall into categories of “sensing, learning, integrating and coordinating”. While the capability

nomenclature employed may imply a "soft skill" perspective, the hard effects of the various capabilities on the income statement are nascent and implied if not taxonomically expressed. Certainly, the "sensing abilities" involved in generating, disseminating and responding to market intelligence all imply incurring expense in the pursuit of future revenues (Pavlou & El Sawy, 2011). Similarly, "acquiring, assimilating, transforming and exploiting knowledge" as expressed in the notion of "learning capabilities" incurs its own expenses. The idea of an "integrating capability" denotes how these costs may be lower for one firm than another by virtue of its increased capabilities in this regard. Finally, resources are allocated to tasks and activities orchestrated (both further expenses) in an effort to ultimately bring about a shift in operational capabilities that results in new revenues (or reduced costs) to the firm and a sustained competitive advantage. It is this explorative exercising of dynamic capability, leading to a shift in operational capability, that constitute the mitigation or exploitation of trends within the system the firm operates in, for the aims of increased returns. Periods of decline in operating margin for the system as a whole are unimpressive upon the dynamically capable firm as it pursues its protective operating margin strategy with minimal impediment. Conversely, during periods of expansion, the firm is able to employ its dynamic capability to rapidly change its operational capabilities and expansively increase the rate of change in its pre-tax operating margin. Indeed, irrespective of the nature, role, purpose or specifics surrounding the creation and development of dynamic capability, or indeed the various kinds of dynamic capabilities promulgated, our summative indicator, the capacity of exposure to systemic changes in pre-tax operating margin combined with the

effectiveness with which firms are able to manage this capacity, can be said to encapsulate the core of all many of the definitions put forth in the literature, thus far.

Environmental dynamism and dynamic capability.

Scholars are divided among those who argue that the concept is exclusively applicable to highly dynamic environments, others who accept a spectrum of varying degrees of dynamism, those who believe the concept is applicable to both stable and dynamic environments and finally those who exclude the characteristics of the environment completely (Barreto, 2009).

Teece et al (1997) embedded their theory in the awareness of rapidly changing environments in recognition of the constantly shifting competitive horizons that most firms face today. They accurately noted that the RBV fails to capture this notion of constant redevelopment and redefining of competitive advantage, since it is concerned primarily with the notion of "resource picking" while dynamic capability is focused squarely on the concepts of "resource renewal" and reconfiguration (Pavlou & El Sawy, 2011). Moreover, for this reason, any attempt to measure dynamic capability would not be satisfied by simply measuring changes in the operating margin of a firm in isolation of the context in which it operates. In 2007 Teece reiterates the point when he refines this appositeness further to mean those environments characterized by international commerce and a well developed global market for goods and services, poorly developed

technological and managerial knowledge markets, systematic technical change and susceptibility to institutional and regulatory shocks (Teece, 2007).

However, other authors like Eisenhardt and Martin argue that dynamic capabilities are valuable not only in highly dynamic environments but also in "moderately dynamic" ones where "change occurs frequently, but along predictable and linear paths" (Eisenhardt & Martin, 2000). Conversely, Zahra et al promulgate that "a volatile or changing environment is not a necessary component of a dynamic capability" (Zahra et al., 2006). Zollo and Winter confirm this view and argue that dynamic capabilities arise and are employed in less dynamic environments (Zollo & Winter, 2002). Lastly, some scholars such as Makadok ignore the issue of environmental dynamism as being extraneous to their conceptualizations (Makadok, 2001).

In our operationalization, the level of environmental dynamism is similarly peripheral. While dynamic capability may be more or less important in environments of varying levels of turbulence, this has no bearing on the relevance of our indicator or on its calculation. We contend that comparison of our indicator for a particular firm with that of its competitors (defined by those sharing a similarly turbulent environment) will be sufficient to comment on the importance of its dynamic capability in that milieu. Some firms, for example, may enjoy advantage because of their comparative high levels of dynamic capability within a static environment, while not being a particularly dynamically capable overall. Others may find themselves unable to sustain a competitive advantage (i.e. have a comparatively low dynamic capability) within a particularly

turbulent environment, despite having high dynamic capability when compared to the entire system. We consider dynamic capability to remain the ability to modify a firm's operational capabilities in light of changes to the greater context in which the firm operates. If a firm were to operate within an environment of low fluctuation, the firm would still possess some measure of dynamic capability. The importance or application of this capability while being perhaps greatly reduced is not annulled.

Dynamic capability outcomes:

Zollo and Winter argue that the very viability of an organization will prove transitory should it have no dynamic capabilities (Zollo & Winter, 2002). We do not subscribe to this sweeping view of dynamic capability outcomes. Instead we recognize that dynamic capabilities have varying levels of significance in different environments. However, since we also contend that these capabilities are nevertheless expressed as changes in operational capabilities (operating margin), it follows that we argue for some measure of causal (though not linear) relationship between a firm's level of dynamic capabilities and its performance. Teece et al comprehensively state that a firm's competitive advantage and, hence, capacity for wealth creation and ultimately success or failure rest with its dynamic capability (Teece et al., 1997). While we may contend that every firm's success or failure need not rest with solely with its dynamic capabilities, we do recognize the link between these capabilities, profit, and firm value.

In a later paper, Teece notes that the “ambition of the dynamic capabilities framework is nothing less than to explain the sources of enterprise level competitive advantage over time” (Teece, 2007). Eisenhardt and Martin seem to moderate this view somewhat in an earlier paper when they advance that “dynamic capabilities are necessary, but not sufficient, conditions for competitive advantage” (Eisenhardt & Martin, 2000). We concede, like Eisenhardt and Martin, that competitive advantage (particularly in industries with low environmental dynamism) may be ascribable, at least in part, to more static type operational capabilities (like scale for example, or even to external sources like import tariffs and other artificial mechanisms). We also recognize that since competitive advantage equates to a firms ability to sell more products or services at a cheaper cost than its competitors, over time the corporation's competitive advantage, and hence profitability and returns on both assets or equity, must be enhanced and by its dynamic capabilities.

Shortfalls in Current Operationalization

The lack of a universally agreed upon measurement index has certainly hampered research in the field of dynamic capability. While several important empirical studies have been undertaken into the characteristics, outcomes and antecedents of Dynamic capability (for an excellent taxonomy see Barreto, 2010), without exclusion these studies have had to stop short of extrapolation toward the ideal of a universal index for measuring dynamic capability. Clearly development of precisely such an indicator is of great value to the field since it would allow for a wealth of comparative research into the relevance of dynamic capabilities and its effects across industries, geographic locations, length of supply chain, marketing spend, innovation, capital expenditure and a myriad of other secondary variables.

Pressing among the problems associated with such a development has been the fact that past studies, either through subjective data sources or limited sample sizes are not suitable for universal application. That is not to say that these studies are not without merit or flawed in their own right. The point is that they are not suitable for development into an operationalization of dynamic capability that may be applied across all industries and over time. The purpose of this section of the paper then is merely to illustrate the limitations of existing studies for the quantification of dynamic capability; and furthermore, to inform how our new construct will thus fulfill an important void in the literature and allow for comparative research in the future.

Specificity:

In 1997, Helfat undertook one of the first "empirical investigation[s] of dynamic R&D capabilities" that dealt with the "role of complementary know-how and other assets in the context of changing conditions in the U.S. petroleum industry during the 1970's and early 1980's" (Helfat, 1997). While Helfat was able to show that companies with either larger physical assets and technical knowledge responded to the rising oil prices through greater R&D spend on coal conversion technologies, the fact that the study focused on only the largest energy firms in the U.S.A. and only on R&D expenses, precludes expansion of the model to embrace a universal cross-industry understanding of dynamic capability. While R&D expenses and scale might very well be antecedent indicators of dynamic capability in certain cases, a more holistic approach is needed to account for the different sources of sustained competitive advantage. In other sectors, for example, price pressures like those in the petrochemical industry during the period under study might have been addressed through increased marketing expenditure, raw material sourcing or a myriad of other options not available or not employed by energy firms.

This kind of industry or even firm specific research into dynamic capability has continued within the literature, without any real possibility of a move toward more collective or comparative application. In 2000, Rosenbloom examined the role of managers as a central element of dynamic capability (Rosenbloom, 2000). The study focused on just one firm – NCR Corporation – a provider of "self-service solutions for

ATM machines and software, POS and Retail systems and airline check-in systems" (NCR Corporation, 2012). As with the previous Helfat study, while management might have a great effect on dynamic capability for NCR, the question of how NCR management's influence on dynamic capability might be compared to other firms or sectors remains unanswered.

Similarly, in 2000, when Galunic and Eisenhardt undertook "an intensive and inductive study of a single Fortune 100 corporation, [that] describes how dynamic capabilities … reconfigure division resources"; their theories explaining the characteristics of dynamic capability within multi-business firms, while important, lacks comparability with other kinds of businesses with different structures (Galunic & Eisenhardt, 2001). Moreover, the fact that "data were collected through interviews, questionnaires, observations, and company archives" makes replication of the study across many firms impossible (Galunic & Eisenhardt, 2001).

Also in 2001, Yahoo! And Excite were the subject of a study into how the "form, function, and competitive advantage of these firms dynamically coevolved", a process the authors labeled "continuous morphing" (Rindova & Kotha, 2001). Again, this study, while insightful, cannot elucidate how the dynamic capabilities of these two companies compare to other firms not in the midst of the dawning of the Internet age. Consider too, Gilbert's 2006 study of a newspaper organization (Gilbert, 2006). Once again, instrumental comprehension of dynamic capability in its relation to the coming of the digital epoch to newspaper printing is gained from the study, however, we are limited in

our application of the theoretical constructs purported by this study to firms who experience some similar kind of discontinuous change. So too in Lampel and Shamsie's study of the "evolution of capabilities in the Hollywood movie industry in the aftermath of the transition from a studio era dominated by integrated hierarchies to a post-studio era dominated by flexible hub organizations supplied by networks of resource providers" (Lampel & Shamsie, 2003).

To be sure, these and a multitude of other studies that also focus on firm or industry specific dynamic capabilities, often in relation to very specific periods of economic development or change, do not lend themselves to our aims of developing a universal index to be used across multiple contexts. It is very difficult to deduce comprehensive understandings of dynamic capability from studies that are so (necessarily for their purpose) narrow in their application.

Empirical restrictions:

Other studies, meanwhile, have in a positive development included greater numbers of firms or industries in their dataset, however, the total lack of an operationalization for dynamic capability based on concrete financial statement or similar inarguable numbers, has forced these researchers to rely on the use of inappropriate data for extrapolation to a larger scale. Clearly while larger datasets would generally speak to a more widespread applicability for research findings, these particular studies are at once inherently flawed (for our aims of indicator operationalization) by the subjective nature of surveys, and the

difficulty of replicating such studies on a very large scale. In 2005, for example Song et al examined responses from 466 joint ventures operational between 1990 and 1997 (Song, Droge, Hanvanich, & Calantone, 2005). Their study examined the performance outcomes of dynamic capability through survey responses from "79 presidents; 214 vice-presidents of marketing or directors for marketing operations; 187 vice-presidents of R&D or manufacturing; and 61 others". The insights gained from this data, while critical for the research the authors undertook, lack the extra gravity that impartiality would lend to our proposed single indicator based on indisputable financial data.

Similarly, Slater et al in an express effort to increase the generalizability of their work built a study that included responses from 380 marketing executives from "manufacturing and service businesses operating in 20 different 2-digit SIC code industries" (Slater, Olson, & Hult, 2006). The authors effectively explored the links between strategic orientation (as exemplified through the "Miles and Snow (1978) and Porter (1980) typologies" and dynamic capability (Slater et al., 2006). However, despite the rigorous testing of the data and the barrage of statistical analyses to which it may have been exposed; the numbers still carry less precision than that which may have been afforded by the use of an indicator based not on "multi-item scales" but on collected financial data (Slater et al., 2006).

Comparably, consider Marcus and Anderson, who utilized 1997 survey data from 108 U.S. grocery chains in their 2006 study aimed at a better understanding of the characteristics and intermediate outcomes of Dynamic Capabilities in terms of both

supply chain and environmental management (Marcus & Anderson, 2006). Or, for that matter, Kale & Singh who investigated 175 large U.S. firms involved in alliances (Kale & Singh, 2007), or Danneels who studied 77 U.S. public manufacturing firms (Danneels, 2008), or Døving and Gooderham who investigated 254 Norwegian small accountancy practices (Døving & Gooderham, 2008). All exhibit use of survey data that, for our purposes, negates their use in construction of our operationalization. In as much as these studies are excellent in their own right, they validate the position that a universal indicator is both desirable and necessary within the community of research into the notion of dynamic capability.

And, to be sure, such a necessity has already been recognized. Resultantly, more encompassing quantifications of dynamic capability have been built, chiefly relying on archival sample data. The problem with these studies, in juxtaposition with their counterparts discussed above, is that rather than having a problem of "too little" data, they have "too much". Indeed, in an effort to remain true to the definitions of dynamic capability, empirical researchers recourse to the addition of more and more variables to their operationalization in order to capture the multitude characteristics proposed in the ever-growing body of theory.

King and Tucci, for example, in building their extraordinarily detailed, if complex measure, employed 13 different variables to operationalize the manner in which a firm's "experience influenced both the value and probability of market entry" (King & Tucci, 2002). This model illustrates how difficult building composite indexes for even a single

component or characteristic (in this case market entry) of dynamic capability may be. Kor and Mahoney's 2005 study is another excellent example of this phenomenon. In this case the researchers found, inter alia, that "in a sample of technology-based entrepreneurial firms … a history of increased investments in marketing is an enduring source of competitive advantage" (Kor & Mahoney, 2005). Their methodology included the use of a 4-part model "regression analysis of effects of resource deployments on Tobin's q". The latter being the economic firm level performance indicator chosen, while the effecting variables were measured in an array of forms including "… firm-specific experience of top managers … institutional investor ownership … management ownership, R&D deployment intensity and marketing deployment intensity" (Kor & Mahoney, 2005). While the methodology is sound, employing such a multitude of variables, both difficult to ascertain and replicate, diminishes the exportability and extrapolative power of the study. We purport that a single indicator of dynamic capability, rather than such a complicated index, would be ideal.

Similarly consider a study of Spanish Banks between 1983 and 1997, by Zuniga-Vicente and Vicente-Lorente. Here the authors sought to contrast the "adaptation view (classic strategic management and dynamic capabilities) and the ecological approach" in terms of strategic change. They found a "positive and significant effect of strategic moves (or strategic change) on the likelihood of organizational survival" (Zuniga-Vicente & Vicente-Lorente, 2006). In order to do so their paper relied on "two methodological innovations: (a) the definition and measurement of 'strategic moves' (or strategic change) by using a … cluster algorithm, the MCLUST; and (b) the control of the non-observable

heterogeneity using panel data models for 'probit' regression". Again, the study had to rely on very complex tools to operationalize just a single component of dynamic capability, and resultantly we again contend that our proposed operationalization, that holistically captures the volatility of income and expenditure changes brought about by all operating activities related to the exercise of dynamic capability is merited in the current literature.

Even in cases where a indicator construction itself is not very complex, for example Karim in 2006, who purported that "acquired and internally developed units serve different roles in the process of change" in her study of 250 medical firms between 1978 and 1997 (Karim, 2006), the tracking of each unit in question, over the entire study period as it structurally evolves, is not the kind of process that is easily repeatable for thousands of firms. Conversely, the regression coefficient we propose is able to do precisely that by relying exclusively on readily available financial statement data.

In sum, while there is a definite want and need for a universal dynamic capability indicator, not least of all because such an indicator would allow true comparative study across all industries, timeframes and economies, there are also considerable issues with existing research that precludes the use of current methodology for such an endeavor. In many instances, data or methodology used is either highly subjective or greatly specific to a particular firm or industry. In other cases, operationalization of dynamic capability has despite exceeding complexity, lacked replicability or in some cases applicability across milieus. A great advantage to further research in the field of dynamic capability

would hence be an operationalization that upholds the definitions of the construct while at the same time being easily replicable and based on readily available, objective data. In short, we contend that our proposed indicator fulfills that promise.

Operationalization

Hypothesis:

The central hypothesis we present in this paper is that the effectiveness with which a firm is able to manage the opportunities for change to its operational capability that arise as a result of the environment in which it operates fulfills the requirements for a universal indicator for the dynamic capability of that firm. Our indicator is quantified by the resulting net change in pre-tax operating margin for a target firm that may be ascribed to its systemic integratedness during the same period. To that end, we have shown already that our conceptualization holds true to most of the definitions of dynamic capability, as it originated in the RBV of the firm, strategic management theory, and evolutionary economics and throughout the growing research into the subject, regardless of the variations of definition encountered.

Operationalization:

To reiterate, we assert that corporations attain a specific level of operational capability. In financial terms, the corporation is able to sell a certain number of its products or services, i.e. generate revenues of a certain dollar value, while at the same time incurring a particular set of associated costs and expenses for doing so. The move from here to operating margin is merely the division of the resulting profit from operating activities

into top line revenues to give the pre-tax operating margin of the firm, expressed as a percentage. Importantly, a firm's operating margin is also an analysis of its competitive advantage. The firm is defends, expands or retreats from a set market share while incurring a cost in for example, research and development, marketing, development of additional facilities or productive capacity for doing so. (The pre-tax operating margin that a firm achieves therefore represents how it has selected and applied the valuable bundle of resources at its disposal to bring about an advantage over its competitors and thereby win market share and increase revenues, decrease expenses and ultimately increase returns over time.

Since dynamic capabilities are those that modify operational capabilities in response to changing environments, we assert that changes to operating margin that are occur as a result of the firms integratedness with the system itself constitutes the dynamic capability of that firm. In practice each firm within the system similarly exercises its own capabilities resulting in a market that is not static and predictable but subject to fluctuation and change. For example, competitors may increase their expenses in terms of marketing or research and development in an attempt to steal market share from the firm and in so doing leave the firm with less revenues than expected. Prices for raw materials and goods may affect the firm's own expenses as well as those for all companies in the market. A competitor may even, through some disruptive innovation, drastically shrink the market for one of the firm's own products. Internally, critical staff may be lost to competitors, plants become obsolete and conflicts between management occur. Indeed, all the complexities of economic evolution are captured in this notion of pressure and

opportunities within the system, that create the capacity for a firm to exercise dynamic capability by modifying its operational capability.

In seeking to mathematically define dynamic capability, we have employed a simple linear regression to investigate the covariance of a target firm's operating margin and the overall trend in operating margin growth or decline experienced by the system in which it operates. The known x's and y's in this model are thus given by yearly change of the aggregate mean of pre-tax operating margin for all companies in the system and the yearly change of pre-tax operating margin for a target company, respectively. It is this slope (or the beta coefficient of the regression equation) that describes the volatility with which the pre-tax operating margin of a target company moves in relation to the performance of all firms within the system.

Assumptions:

Three critical assumptions bare mention here. Firstly, we hold that all the companies in our system (publically traded USA companies operational between 2002 and 2011), rather than just competitors within a specific sector, are the appropriate basis for our regression model. This notion is born out of the importance of the interconnected nature of contemporary economic systems. For illustrative purposes, consider that the increase in selling price of a particular product or service, while increasing the revenues of the manufacturer (and hence it's operating margin), also has the concomitant effect of increasing the cost of goods for all downstream companies, irrespective of the sector in

which they operate, (and thereby challenging their own margins). In this way, an increase in the oil price is likely to have a negative effect on operating margins within the auto sector as fewer consumers purchase new vehicles and hence revenues decline. The same holds for routines and capabilities; as upstream suppliers become more efficient or innovative, these effects are also translated into very real changes in revenues and expenses for their clients. Legislative effects are similarly translated across sectorial boundaries. A stringent tax on carbon emissions for example has a ripple effect throughout the system as those players whose processes are emission intensive face drastically increased operating expenses that are passed along the value chains of their clients. In some merely examining the operating margins for just a particular sector negates the influences that more widespread connections may have on any one firm.

Furthermore, consider the very similar evolutionary economics perspective employed by Teece et al (1997). They explain the complexity of interdependence, competition, growth, structural change, and resource constraints that a firm faces, in terms of the routines, path dependencies and organizational learning that it undergoes in order to adapt, evolve and survive (Nelson & Winter, 1982; Schumpeter, 1934). While the nature of mechanisms employed by dynamic capabilities are not central to our study, the effects of their engagement are. The often intangible mechanisms of knowledge creation and transfer, for example, have very real cost and revenue implications; Consider for illustration that as organizations learn, the results thereof may be seen in decreased costs associated with production or increased revenues from new product development, and reflected as such in financial statement data. This fact speaks again to our assertion that irrespective of the

nature of and character of dynamic capabilities, without fail the effects of their employment are visible in changes to the pre-tax operating margin of a firm.

Secondly, we accept that firms in differing stages will have different operating margin growth expectations. We contend that this notion is superfluous to our model however. In our discussion above we have illustrated a stable and mature company hoping to achieve growth in operating margin over time, while other firms may for example have very high margins on their existing products and services but are likely to see these returns slip rapidly as competition enter the business. At the same time, while firms with newer innovations typically have increased initial expenses, they also become cheaper over time as learning effects and network externalities come into play. While in still other cases, one may encounter a firm that is consistently losing money and has a negative operating margin. In all permutations however, volatility, rather than growth, relative to the other firms in the system is the central estimation we are concerned with.

Thirdly, whether or not firms have a high or low operating margin (in dollar terms) is irrelevant to the study since we are concerned merely with the change in operating margin (expressed as a percentage) year on year. To be sure, while firms may have reasons to pursue, for example, a low operating margin (tax benefits for one), the fact remains that the in practice most every firm desires a consistent if not increasing operating margin. Moreover, we are concerned only with the portion of movement in operating margin growth that can be credited to exposure to systemic forces, rather than in any way offering commentary on the overall trend in operating margin itself. Thus a

firm with a negative operating margin for a period may still have a positive dynamic capability movement for the same period. Furthermore, a pre-tax figure is used in our methodology to negate the effects of varying tax levels on reflected company performance.

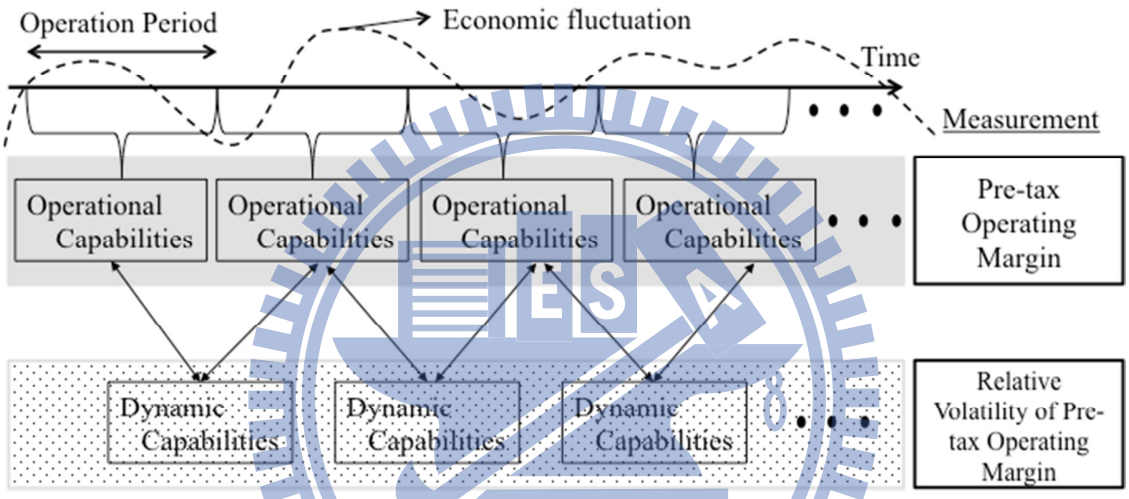

Figure 1: Conceptual Construction of Dynamic Capability Indicator

Methodology:

The original scope of our study comprised all firms that were traded publicly in the United States between 2002 and 2011. After initial data was gathered utilizing figures prepared by Value Line Inc. (Value Line, 2012) and collated by Dr. Aswath Damodaran, Professor of Finance at the Stern School of Business at New York University (Damodaran, 2012), applicable figures for over 7000 companies were obtained. By eliminating companies that ceased to exist between 2002 and 2011 as well as those with missing, abnormal or outlier data we arrived at a smaller dataset of 1967 companies.

From this dataset, Pre-Tax Operating Margin, expressed as a percentage, from 2002 to 2011was tabulated. Thereafter, the yearly change in in this pre-tax operating margin was calculated for each firm by simply subtracting the pre-tax operating margin for each year of the study from the same figure for the previous year. The change of aggregate mean of pre-tax operating margin for all firms was also calculated. In this case by adding all the margins together and then dividing by the number of firms in the dataset. These two arrays thus become the inputs for a simple linear regression, in which the model is given by:

$$\boldsymbol{y = \beta_0 + \beta_1 x + \varepsilon} \tag{1}$$

where

x: change of the aggregate mean of pre-tax operating margin for all firms in the system per year

y: change in pre-tax operating margin for a target firm per year

The slope $\boldsymbol{\beta_1}$, a regression model parameter, stands for the capacity for dynamic capability as it is proposed in this study. It is the influence of systemic forces upon the firm in its pursuit of increased operating margin and the firm's effect on the system at the same time (in other words, the firm's integration with the aggregate interplay between firms occurring at the systemic level, at the indicated level of significance). The $\boldsymbol{\beta_0}$intercept of the regression equation shows the change in pre-tax operating margin that may be theoretically ascribed to the firm itself, in isolation of the system.

The product of $\boldsymbol{\beta_1}$ and the x value (mean change in operating margin for all firms in the period) gives the size of increased operating margin for a target firm that may be ascribed to this systemic influence or its dynamic capability. The regression models (Equation 1) were built for the1967companies mentioned. From this juncture we eliminated those firms whose significance for the dynamic capability capacity indicator was < 0.1. Through this process our data set was reduced to 857 companies.

Finally, we computed the dynamic capability indicator of the firm by multiplication of $\boldsymbol{\beta_1}$ and the x value (mean change in operating margin for all firms in the period). The

formula given below thus constitutes the dynamic capability indicator (d) for a specific firm in a given period relative to the system in which it operates:

$$(\boldsymbol{d}) = (\boldsymbol{\beta_1})\,(\Delta\, \boldsymbol{aggregate\ mean\ of\ Pre-Tax\ Operating\ Margin})$$

(2)

The period and system applicable for study is left open to interpretation. In future studies it may be of great value to limit these variables according to specific periods of volatility (stock market crashes), geographical areas (countries or regions), political economies (socialist and capitalist), environmental dynamism, industries, technologies and many others. Indeed, most every financial ratio really only becomes meaningful relative to a specific context. In our study we have expressly examined the whole system of public companies that were publicly traded on stock exchanges (but not necessarily physically operating) in the United States between 2002 and 2011, to build the broadest possible base of applicability upon which to argue our case.

Results and Recommendations:

Appendix A compounds the results of our study and includes the following data for each firm: Company Name, Ticker Symbol, Industry Name, SIC Code, Intercept and Significance, Beta Coefficient and Significance of Regression Model, Net Change in Operating Margin and Dynamic Capability Indicator (i.e. the change in operating margin directly related to systemic influence). The firms are arranged firstly according to dynamic capability and secondly (for reasons that will become apparent) by $\boldsymbol{\beta_0}$ greater than zero. Selected pertinent findings are presented below for more detailed discussion.

System Aggregate Performance:

In the period under study, we find an initial sharp incline in mean aggregate pre-tax operating margin for publicly traded companies in the United States; followed by a longer decline from 2005 to 2010 before recovering somewhat again. The net effect in the period is a marginal growth of 1.87% (from 7.92% in 2002 to 9.79% in 2011). This net change over the period, along with the systemic fluctuations between is illustrated graphically below:

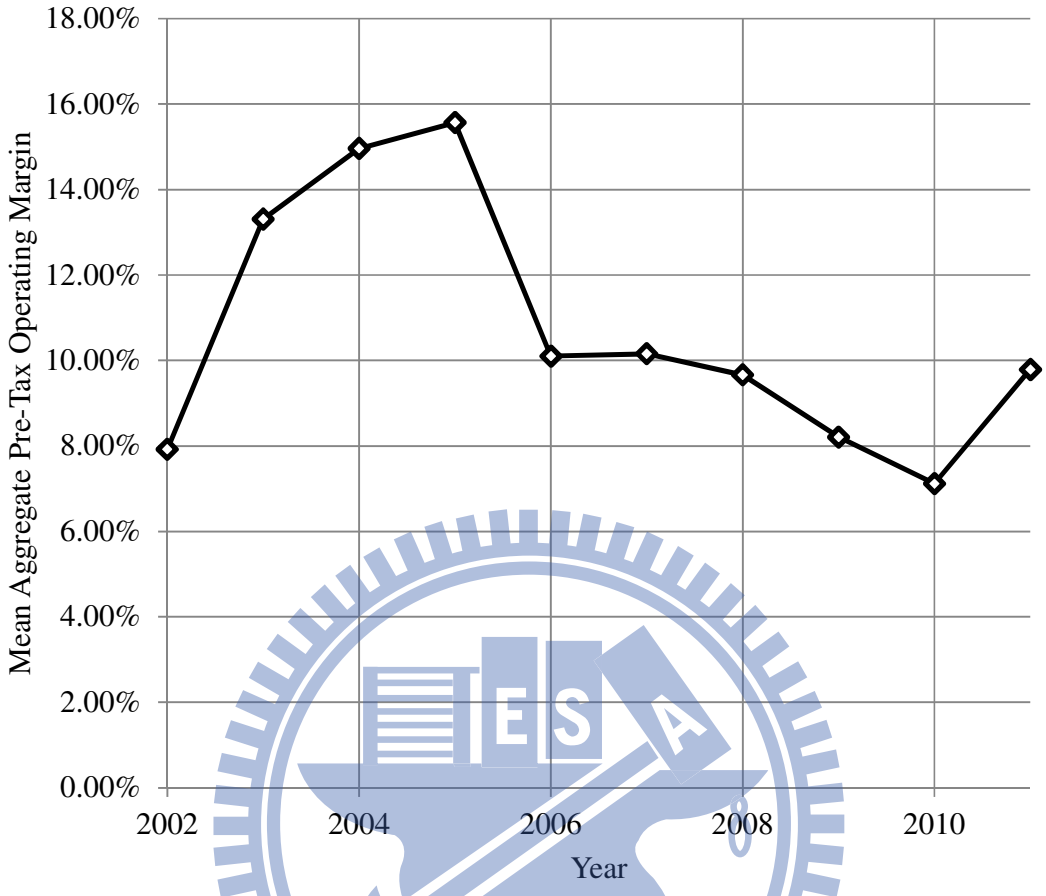

Figure 2: System Operational Capability Performance (mean aggregate pre-tax operating margin growth 2002-2011)

The Beta Coefficient (Capacity for Dynamic Capability):

After running regression models for the 857 firms in our finalized dataset we find that beta coefficient varies widely from a high (i.e. greater capacity for dynamic capability as a result of increased exposure to systemic influence) of 11.96 for Vaalco Energy, to a low of -9.16 Ciena Corporation. Returning to the notion proposed in our methodology, recall

that it is this coefficient ($\boldsymbol{\beta_1}$) that stands for the capacity for dynamic capability. It is the level of systemic influence on operational capability changes. Furthermore, we contend it is this capacity when multiplied with the actual net change in operating margin of the system that accounts for the effects of dynamic capability on the operating margin of the target firm (i.e. the theoretical size of changes in operational capability, or pre-tax operating margin, arising as a response to environmental change).

Some scholars, however, have argued that dynamic capability is limited only to the capacity for change, or the coefficient ($\boldsymbol{\beta_1}$), and not the product of this influence. Helfat et al raise the issue when they assert that dynamic capabilities denote "the capacity of an organization to purposefully create, extend, or modify its resource base" (Helfat et al., 2007). While we wholly concur with the aim of the firm being to reflect a situation on its balance sheet that reiterates its strategic intent, we however differ from Helfat et al in that we contend that the capacity for dynamic capability is not the full measure of the concept. All firms have a capacity for dynamic capability but through mismanagement of this capacity or through financial over extension firms are sometimes not able to translate this capacity into more effective operational capabilities and hence increasing returns. In order to do so, the firm must carry out its operations (exercise its total operational capability including the modifications by dynamic capabilities) in such a manner so as to increase its operating margin and thereby returns.

We can illustrate this point graphically (both the dataset and the curve itself are shown below). We arrive at the curve by first ranking firms, according to their net change in operating margin between 2002 and 2011, and then grouping them in 10-percentile lots. By plotting each 10-percentile group of firm's average net change in operating margin, against their average capacity for dynamic capability (as expressed as $\boldsymbol{\beta_1}$ in the regression equation) we find, very clearly, no evidence of a linear relationship (suggesting that increased capacity results in increased operating margin performance) between the two:

Table 1: Dataset showing relationship between Pre-Tax Operating Margin Firm Performance and Capacity for Dynamic Capability

	Capacity ($\boldsymbol{\beta_1}$)	Firm Performance (Net Change in Op. Margin)	Terms
Top 10% of firms	3.26	37.97%	86
Next 10%	1.66	10.98%	85
Next 10%	1.22	6.53%	85
Next 10%	1.10	3.79%	86
Next 10%	1.03	2.16%	86
Next 10%	0.71	0.74%	85
Next 10%	0.95	-0.79%	86
Next 10%	1.08	-2.38%	86
Next 10%	1.36	-5.07%	85
Bottom 10%	1.87	-16.43%	86

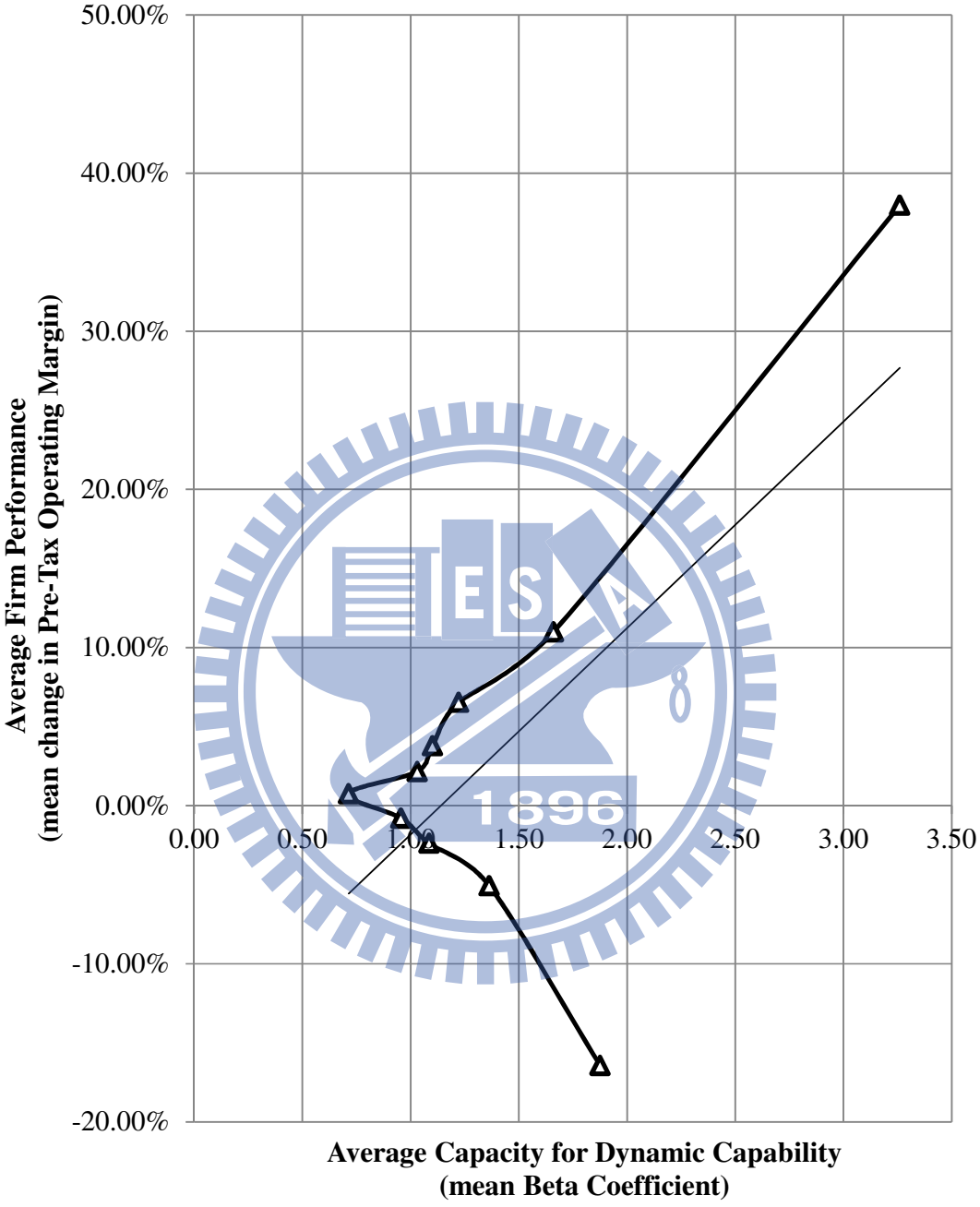

Figure 3: Graphic Relationship between Pre-Tax Operating Margin Firm Performance and Capacity for Dynamic Capability

Instead, we find that capacity without effective application is shown to be as good, or even better in some cases, as no capacity at all. For around 90% of the companies under study, a capacity for dynamic capability of between 0.71 and 1.66 might be considered hypothetically equal in chance for advantageous or disadvantageous changes in operating margin as a result. As one would expect, increased systemic exposure goes together with risk of either great benefit or peril.

In general, however, it appears that past a certain threshold (1.87 beta coefficient in our study), any greater capacity for dynamic capability tends to coincide with always positively improved effectiveness of dynamic capabilities in their effect on net operating margin. This does not mean that firms past a certain threshold of systemic exposure can always expect better firm performance as a result. We propose instead that at a high enough coefficient (somewhere between a beta coefficient of 1.66 and 1.87 in our dataset here), firms have such great systemic exposure that they must either adapt and ensure the effective use of this capacity, or face death. Their operational routines and resources are unsuitable for any modification by their dynamic capabilities that can effect positive firm performance, as a result they must alternately develop either sufficient wholly new operational capabilities for them to profitably enact their dynamic capabilities upon or indeed allow their dynamic capabilities to supersede their operational ones and become in themselves a primary source of operational capability or competitive advantage.

Further contending against the capacity as summative measure of dynamic capability argument, consider that firms with low beta coefficients (i.e. lower capacity for dynamic

capabilities) under conditions prevalent in 2005/2006 when average pre-tax operating margins fell almost 5.5% would have minimized exposure to the decrease. A firm with a coefficient of 0.8 would be expected to only have experienced a -4.38% drop in growth of its pre-tax operating margin. In this scenario it is easy to argue that capacity alone accounts for dynamic capability and that this particular firm may be considered to have better used its minimized systemic influence to offset challenges to its operational capabilities and hence operating margin.

However, when the situation is reversed and the average pre-tax operating margins within the system are rising, such as the case in 2011, those same firms would not see increases in operating margin growth equal to the average across the system, if they maintained their operational capabilities as they were before. The same firm in this case would be expected to see increases of only 2.36% while the average for the market increased by 2.67%. A large loss following a large increase is obviously as good as no increase at all.

It may further be argued that a firm would thus ideally pursue a strategy that would allow it to minimize exposure to systemic influence during periods of decline in operating margin growth, while following a more expansive and engaging strategy that allowed it to fully exploit and drive periods of increasing pre-tax operating margin growth. In other words the firm would like to have a low beta coefficient of the regression equation during periods of declining growth in operating margin, while also instantaneously being able to switch to a more immersive strategy and hence higher beta coefficient during periods of high growth in operating margin. Dynamic capability in this case would merely be the

firms' ability to change its level of exposure to systemic changes in pre-tax operating margin, in such a way that negative effects on pre-tax operating margin are minimized while periods of growth are maximized. Such a supposed ideal scenario is presented in Figure 1 below. The shaded areas indicate the range of acceptable capacity for dynamic capability proposed by this theory.

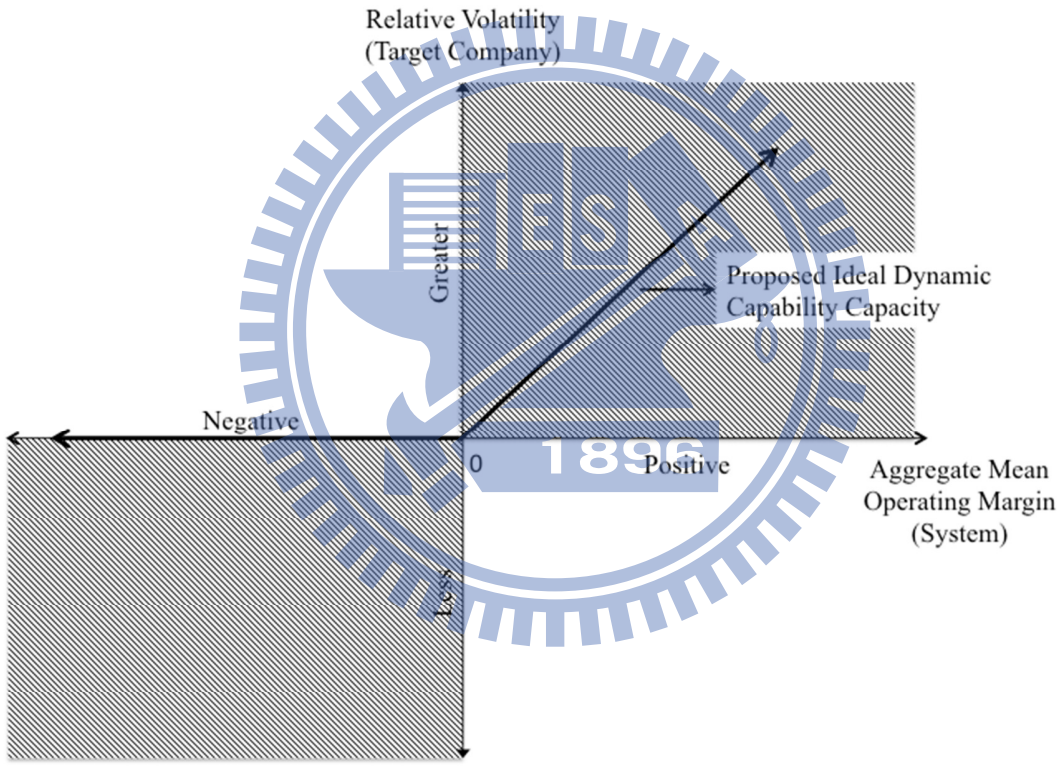

Figure 4: Supposed Ideal Scenario Management of Dynamic Capability

In practice, however, such an eventuality is patently implausible. The gamut of "sensing, learning, integrating and coordinating" capabilities comprising dynamic capabilities are not given to incredibly short time frames of yearly or monthly change (Pavlou & El Sawy, 2011). Similarly, financial leverage instruments (as may be required for a firm to employ a more expansive strategy) do not become immediately available at a moments notice, nor are the terms of such instruments usually as short as a year or two. As such, the strategic management decisions associated with dynamic capability ultimately reduce, in part, to a question of risk tolerance: how much risk is a firm willing to incur in order to maximize future profits? Dynamic capabilities that stress risky, over-extending behavior from the firm are not ones that translate to a healthy operational capability or sustained competitive advantage.

Furthermore, we contend that the firm must also choose the most applicable bundle of resources to build upon and modify given its operational context. Having a high capacity but then exercising this on the incorrect bundle of resources is not tantamount to dynamic capability. Thus in order to accurately measure a firms dynamic capability we must also consider the net change in operating margin the firm is able to realize from modifying its resource bundle. Dynamic capability implies that a firm is able to follow the longer-term path of steadily increasing pre-tax operating margins with measured and effectively utilized exposure to volatility along the way. Thus while there are periods of expansion and contraction of pre-tax operating margin within the system, the dynamically capable firm is able to manage these both with reserve. Firms that are unable to do so find themselves in severe danger of financial difficulty.

Dynamic Capability and Firm Performance:

At this juncture we are now able to calculate the potential dynamic capability of each of the firms in our study (in terms of the theoretical net changes to each respective firm's pre-tax operating margin that are ascribable to systemic influence). It is important to note that this calculation produces only the potential effect that dynamic capability may have. In many cases not all, and in some cases very little, of the potential benefit to operating margin is actually realized by the firm. We explore this notion in more detailed fashion in a later section. Nonetheless, we can graphically show the relationship between potential dynamic capability and firm performance by plotting of the hypothetical effects of fully realized dynamic capabilities (quantified as the value of net change in pre-tax operating margin a firm may hope to achieve as a result of systemic influence) against the actual net change in pre-tax operating margin firm the firm does achieve (in the same manner as we did with only the capacity of dynamic capability or beta coefficient, earlier).

This time the curve that is produced (shown below) suggests a far more linear relationship between dynamic capability and firm performance. In other words, firms with higher potential dynamic capabilities are more likely to have higher net increases in operating margin than those who don't. We take this as part proof of our assertion that potential higher dynamic capability (i.e. higher theoretical contributions to firm performance arising from exposure to systemic influence) increases the performance of any given firm and, moreover, that capacity alone (i.e. merely the exposure to systemic

influence) is absolutely not a reliable indicator of increased performance in itself. Once again, both the simplified datasets and the graph itself are reproduced below:

Table 2: Dataset showing relationship between Pre-Tax Operating Margin Firm Performance and Potential Dynamic Capability

	Dynamic Capability ($\boldsymbol{\beta_1}$) x mean change in operating margin (all firms)	Firm Performance (Net Change in Op. Margin)	Terms
Top 10% of firms	8.20%	21.50%	86
Next 10%	4.47%	3.75%	85
Next 10%	3.40%	2.22%	85
Next 10%	2.75%	3.17%	86
Next 10%	2.25%	1.01%	86
Next 10%	1.88%	1.36%	85
Next 10%	1.55%	0.30%	86
Next 10%	1.27%	1.18%	86
Next 10%	0.99%	1.46%	85
Bottom 10%	0.20%	0.68%	86

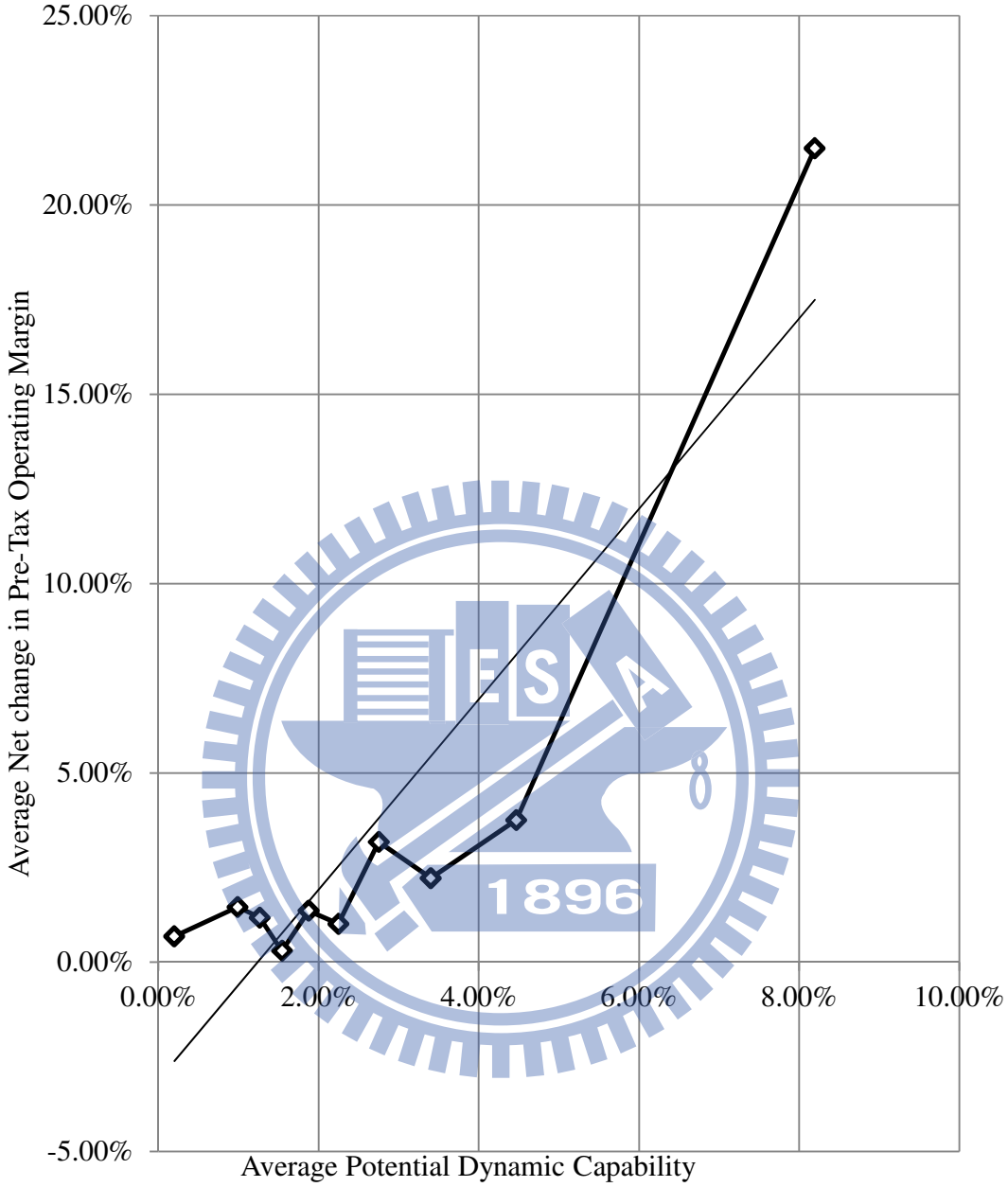

Figure 5: Graphic relationship between Pre-Tax Operating Margin Firm Performance and Potential Dynamic Capability

Potential vs. Actual Dynamic Capability:

Using the measure of potential dynamic capability just described we can rank the top 25 companies according to the theoretical increases in operating margin they could have achieved by fully realizing their dynamic capabilities. This will become instrumental as we later expand on the complex interrelationship between operational capabilities and dynamic ones. At this stage, note that between 9.22% (Gilead Sciences) and the high of 22.37% (achieved by Vaalco Energy), there appears at first inspection to be great benefit to firms (in the form of pre-tax operating margin gain) from the employ of dynamic capability.

Table 3: Top 25 Most Potentially Dynamically Capable firms.

Company Name	Industry Name	Capacity	Dynamic Capability	Performance
VAALCO Energy Inc	Petroleum (Producing)	11.96	22.37%	138.13%
Pope Resources L.P.	Paper/Forest Products	9.67	18.08%	78.55%
Sohu.com Inc.	Internet	7.93	14.83%	120.40%
Aetrium Inc	Electronics	6.91	12.92%	26.92%
Consol. Tomoka Land	Property Management	6.89	12.88%	21.53%
Akorn Inc.	Med Supp	6.89	12.88%	70.50%

Golden Star Res	Precious Metals	6.79	12.70%	20.98%
Multimedia Games Inc	Recreation	6.78	12.68%	-5.35%
Ramtron International	Semiconductor	6.50	12.16%	80.97%
Abiomed Inc.	Med Supp Invasive	6.45	12.06%	71.01%
Internap Network Svcs	Internet	6.26	11.71%	83.61%
Trimedyne Inc.	Med Supp Invasive	6.21	11.61%	53.04%
Nova Measuring Instr.	Precision Instrument	6.09	11.39%	112.14%
Forest Oil	Petroleum (Producing)	6.02	11.26%	13.18%
Newtek Business Svcs	Environmental	5.84	10.92%	-43.93%
Anadarko Petroleum	Petroleum (Producing)	5.84	10.91%	-2.67%
PCTEL Inc.	Telecom. Services	5.76	10.77%	69.22%
Westar Energy	Electric Util. (Central)	5.45	10.19%	52.19%
LookSmart Ltd.	Internet	5.39	10.08%	12.83%
Sierra Wireless Inc	Wireless Networking	5.31	9.93%	34.20%
Barnwell Industries	Petroleum (Producing)	5.28	9.87%	1.47%
Harmonic Inc.	Telecom. Equipment	5.12	9.57%	74.74%
Life Partners Holdings	Financial Svcs. (Div.)	4.98	9.31%	52.28%
Gilead Sciences	Drug	4.93	9.22%	94.96%
eGain Communications	Internet	4.8	8.98%	104.44%

As we have suggested before however, potential dynamic capability only really indicates a purely theoretical contribution to firm performance. There exist several cases where a

firm has a very high potential dynamic capability (theoretical gain in firm performance), but the full extent of this potential is not realized in terms of the actual net gains to operating margin. Such a scenario occurs because of the relationship that exists between dynamic capabilities and the operational capabilities that underlie them. Recall from our earliest assertions that dynamic capabilities are "those that operate to extend modify or create ordinary capabilities" (Winter, 2003). Thus we must infer that should a firm have poor operational capabilities (not necessarily in an absolute sense, but relative to its peers), it follows that even exceedingly good potential dynamic capabilities may be unable to modify these nascent operational capabilities enough to ensure positive effects in terms of operating margin growth.

To illustrate this point consider the following example of two firms, from the top 25 shown above, with comparable dynamic capability but very different firm performance results: Looksmart Inc. and Westar Engineering. While Looksmart Inc. did manage to post 12.83% increase in its operating margin during this period (a commendable effort in the overall milieu which only increased 1.87% on average) consider that through the systemic exposure of this firm (a capacity or beta coefficient of 5.39), it was expected to produced a theoretical 14.61% increase in operating margin from dynamic capabilities alone. The dismal performance is indicative of the poorly applicable bundle of resources Looksmart has at its disposal to support its dynamic capability. Indeed, the large capacity for dynamic capability the firm is precluded from its full potential by the poor choice of resources the firm has from which to choose to invest in. The firm's operational capability is built on resources and routines that are not highly profitable, in fact they are

not profitable at all at -10.32% in average operating margin terms, over the period (sum of pre-tax operating margin for each year divided by the number of years). The firm's inherent operational capabilities thus only provide for a low level of dynamic capability effect to be realized. Conversely, consider Westar Energy who managed to translate a similar capacity (5.45) into a similar theoretical dynamic capability contribution to operating margin (14.77%), but with a very different concomitant net increase of 52.19% in operating margin during the same period. The key lies in the operational capability of Westar Engineering. Using the same measure as before, we find that Westar has an operating margin of 17.67% over the period. It has absolutely superior resources and routines that comprise its operational capability when compare to Looksmart Inc. We may say that Westar's dynamic capabilities are more effective for firm performance because they act to modify a superior set of operational capabilities than in the case of Looksmart Inc.

Not all companies have such clear distinctions of what constitutes profitable operational capabilities. Different industries certainly exhibit widely varying levels of average operating margin. Further examples from the list of top potentially dynamically capable firms reaffirm this point. Consider Multimedia Games, Newtek Business Services and Anadarko Petroleum for example. All 3 companies fall in the top 25 of firm's with high dynamic capability, yet they all achieve negative growth in pre-tax operating margin over the period under study (i.e. they exhibit declining firm performance). To understand why we relate their performance once again to their operational capabilities (i.e. their average pre-tax operating margin for the period under study).

Doing so we find that the former two firms (Multimedia Games and Newtek Business Services) have operational capabilities (pre-tax operating margin) below that of their respective industry averages: 14% in the case of Multimedia Games relative to an industry average of 18.12%; and 17.15% in the case of Newtek Business Services compared with an environmental industry average of 20.06%. We contend that because of the poorer (relative to the industry) underlying bundle of resources and routines that comprise these firm's operational capabilities, their dynamic capabilities, no matter how strong, are unable to result in performance gains.

The petroleum producing industry example (Anadarko) shows a more extreme version of this mechanism of interplay between operating capabilities and dynamic ones. In this case the firm indeed has operational capabilities (pre-tax operating margin of 47.31%) for the given period higher than the average of its peers (44.53%), however the firm's resulting performance declined by -2.67%. Evident immediately is the extremely high operating margins of the industry. In fact, the only companies in this industry in our study able to successfully increase their performance in the period (Vaalco Energy, Texas Pacific, Forest Oil and Barnwell Industries) had operational capabilities above the 47% threshold. Here once again, despite the firm's theoretical ability to gain 10.91% in operating margin as a result of its systemic exposure; this capability was not fully realized because of the less effective operational capability of the firm, relative to the industry.

For a more true account of the effect of dynamic capabilities we may modify our dataset to account for only those firms that have indisputably strong operational capabilities. In order to do so we can turn to the intercept of our regression equation as a benchmark. By including only those firms with an intercept at $\boldsymbol{\beta_o}$ greater than zero, we limit our dataset to those firms that that are able to generate positive changes to their operational capabilities in the hypothetical absence of systemic influence. As we have already intimated, this is not a perfect measure. Industries differ widely, and as a result, there may well be the cases of industries where systemic influence is very high and hence operational capabilities are far more dependent on dynamic capabilities than in others. Conceivably, in these scenarios, a firm may have an intercept below 0 (i.e. be unable to produce gains in operating margin in the absence of systemic influence), yet still be wholly profitable after dynamic capabilities are included in the analysis. Nonetheless, we have remade our Top-25 list below, this time including only those firms with undeniably strong operational capabilities below.

Table 4: Top 25 Most Dynamically Capable firms (Intercept > 0)

Company Name	Industry Name	Size class	Intercept	Coefficient	Dynamic Capability	Performance
VAALCO Energy Inc	Petroleum (Producing)	6	12.89	11.96	22.37%	138.13%
Pope Resources L.P.	Paper/Forest Products	5	6.74	9.67	18.08%	78.55%
Sohu.com Inc.	Internet	8	11.75	7.93	14.83%	120.40%
Aetrium Inc	Electronics	2	1.57	6.91	12.92%	26.92%
Consol. Tomoka Land	Property Management	5	0.98	6.89	12.88%	21.53%
Akorn Inc.	Med Supp Non-Invasive	8	6.42	6.89	12.88%	70.50%
Golden Star Res	Precious Metals	6	0.94	6.79	12.70%	20.98%
Ramtron International Corp.	Semiconductor	4	7.66	6.5	12.16%	80.97%
ABIOMED Inc.	Med Supp Invasive	7	6.56	6.45	12.06%	71.01%
Internap Network Services	Internet	6	8.00	6.26	11.71%	83.61%
Trimedyne Inc.	Med Supp Invasive	1	4.62	6.21	11.61%	53.04%

Nova Measuring Instruments Ltd	Precision Instrument	5	11.21	6.09	11.39%	112.14%
Forest Oil	Petroleum (Producing)	8	0.23	6.02	11.26%	13.18%
PCTEL Inc.	Telecom. Services	5	6.51	5.76	10.77%	69.22%
Westar Energy	Electric Util. (Central)	9	4.68	5.45	10.19%	52.19%
LookSmart Ltd.	Internet	3	0.32	5.39	10.08%	12.83%
Sierra Wireless Inc	Wireless Networking	5	2.71	5.31	9.93%	34.20%
Harmonic Inc.	Telecom. Equipment	7	7.25	5.12	9.57%	74.74%
Life Partners Holdings Inc	Financial Svcs. (Div.)	5	4.79	4.98	9.31%	52.28%
Gilead Sciences	Drug	10	9.54	4.93	9.22%	94.96%
M & F Worldwide	Diversified Co.	6	2.78	4.8	8.98%	33.95%
eGain Communications Corp	Internet	5	10.62	4.8	8.98%	104.44%
Integrated Silicon Solution	Semiconductor	6	9.86	4.75	8.88%	97.53%
American Bio Medica Corp	Medical Services	1	3.45	4.70489	8.80%	39.75%
Sigma Designs	Entertainment Tech	5	7.02	4.61	8.62%	71.71%

In addition, when we order all 410 firms with $\boldsymbol{\beta_o}$ greater than zero in order of descending dynamic capability and then organize them again into 10-percentile lots, we find distinct proof of a near linear relationship between increased dynamic capability and increased firm performance, confirming our earlier assertion (figure below). These results are offered as unequivocal substantiation of the notion that firms with higher dynamic capability, based on sound operational capabilities, have higher gains in firm performance than their peers who don't.

Table 5: Dataset showing relationship between Pre-Tax Operating Margin Firm Performance and Dynamic Capability for firms with Intercept > 0.

	Dynamic Capability ($\boldsymbol{\beta_1}$) x mean change in operating margin (all firms)	Firm Performance (Net Change in Op. Margin)	Terms
Top 10% of firms	9.80%	52.76%	41
Next 10%	4.69%	17.24%	41
Next 10%	3.53%	11.93%	41
Next 10%	2.81%	10.65%	41
Next 10%	2.25%	7.77%	41
Next 10%	1.88%	7.12%	41
Next 10%	1.51%	7.02%	41
Next 10%	1.17%	5.42%	41
Next 10%	0.90%	4.07%	41
Bottom 10%	-0.14%	2.42%	41

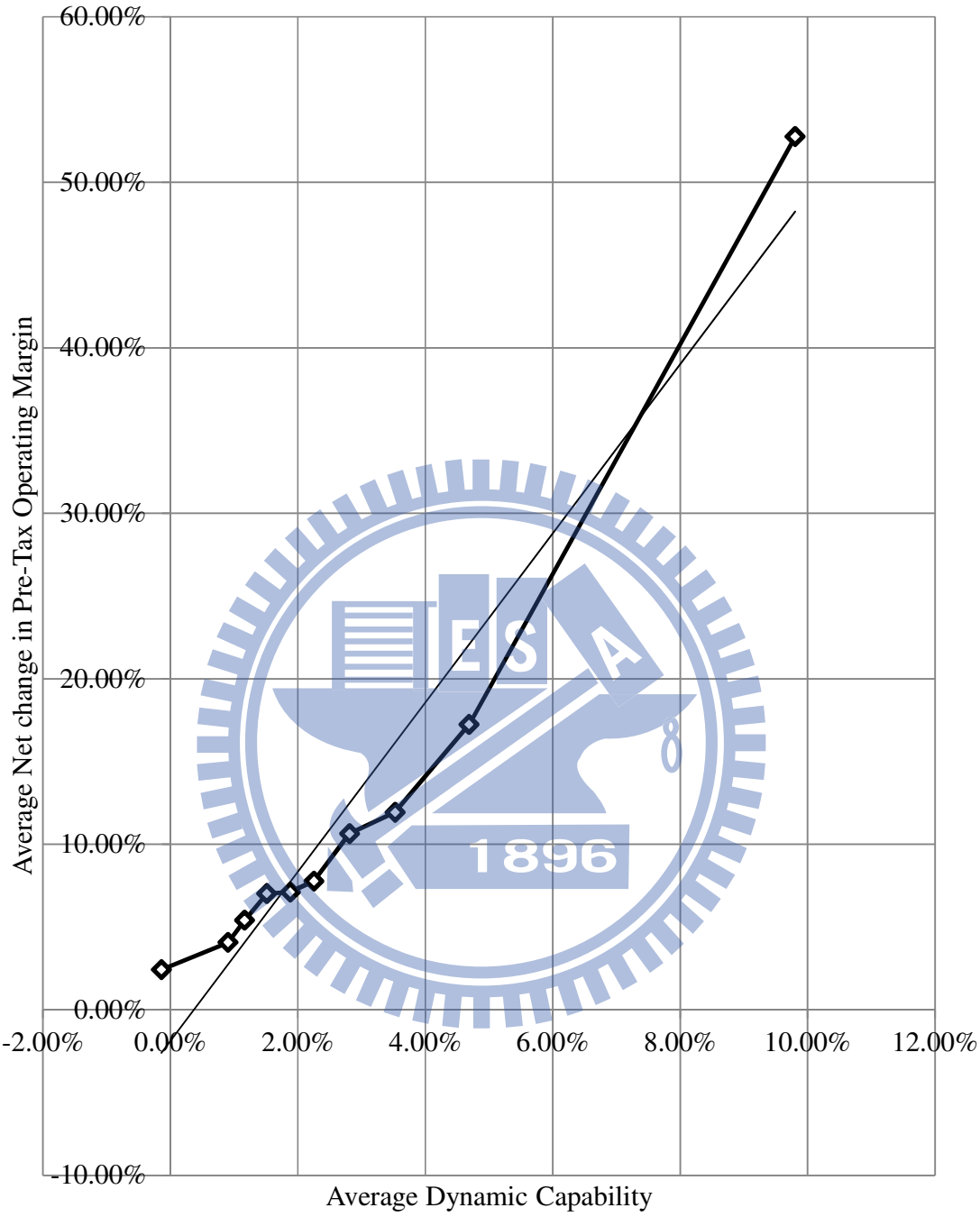

Figure 6: Graphic relationship between Pre-Tax Operating Margin Firm Performance and Dynamic Capability for firms with intercept > 0.

We can also present the converse case as further proof of this notion. In this case we have once again ordered firms in terms of descending dynamic capability and grouped them into 10-percentile lots, but this time we've only included the best (in terms of potential dynamic capability) 410 firms with $\boldsymbol{\beta_o}$ less than zero. The curve produced this time shows an inverse relationship between increased dynamic capability and firm performance: Dynamic capabilities that are based on poor operational capabilities thus do more harm than no dynamic capabilities at all.

Table 6: Dataset showing relationship between Pre-Tax Operating Margin Firm Performance and Dynamic Capability for firms with Intercept < 0.

	Dynamic Capability ($\boldsymbol{\beta_1}$) x mean change in operating margin (all firms)	Firm Performance (Net Change in Op. Margin)	Terms
Top 10% of firms	6.85%	-12.54%	41
Next 10%	4.45%	-6.14%	41
Next 10%	3.43%	-6.49%	41
Next 10%	2.85%	-3.41%	41
Next 10%	2.40%	-3.72%	41
Next 10%	2.03%	-4.54%	41
Next 10%	1.70%	-4.38%	41
Next 10%	1.47%	-2.16%	41
Next 10%	1.27%	4.07%	41
Bottom 10%	1.01%	2.42%	41

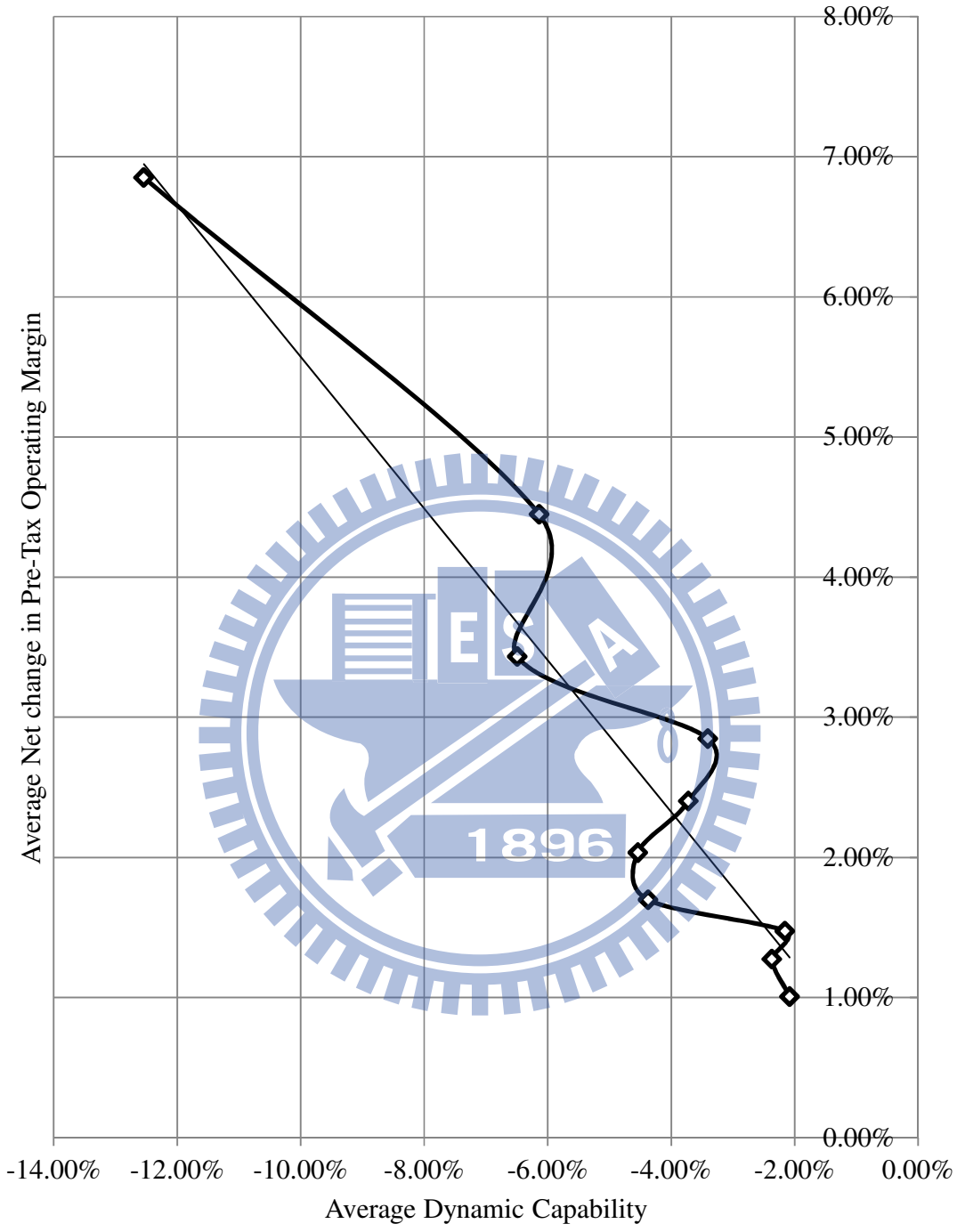

Figure 7: Graphic relationship between Pre-Tax Operating Margin Firm Performance and Dynamic Capability for firms with intercept < 0.

Our research therefore substantiates the view, held by Eisenhardt and Martin, that it is not merely the custody of dynamic capabilities but indeed "using [these] sooner, more astutely [and] more fortuitously than the competition" along with making choices of the most apt bundle of resources required by a specific context that determines the outcomes of dynamic capabilities (Eisenhardt & Martin, 2000). Furthermore, while the above authors argue that firms with dynamic capabilities tend to outperform competitors lacking such capabilities, we find support for the view, promulgated by Zott, that firms with identical dynamic capabilities may choose to build different resource bundles and hence have widely differing performance outcomes from the employ of their abilities (Zott, 2003). Zahra et al substantiate this view with their assertions that dynamic capabilities may even damage, rather than improve, s firm's performance when they are employed with incorrect assumptions of cause and effect (Zahra et al., 2006).

Our discussion of any further sectorial comparison beyond the qualified conclusions presented above is limited by the number of firms from each industry in our sample (in some cases just 1 firm). While the significance of the firms used in our sample (in terms of their operating margin covariance to the system as a whole) is empirically observed, that is not to say that the firms selected are similarly representative of their respective sectors as well. We've explained already our reasons for including all the firms publically traded in the USA in our dataset. We do however obviously recognize the need for analysis based upon more extensive sectorial data. Specifically we believe it is important to study the effects of dynamic capability by industry to show that for dynamic

capabilities to have a positive effect on firm performance, the operational capabilities that underlie them must be profitable (in pre-tax operating margin terms) in their own right.

Bibliography:

Amit, R., & Schoemaker, P. J. H. (1993). Strategic Assets and Organizational Rent. (L. Alterman, G. A. Doyle, & M. K. Izard, Eds.)*Strategic Management Journal*, *14*(1), 33-46. John Wiley & Sons. doi:10.1002/smj.4250140105

Barney, J. B. (1986). Strategic Factor Markets: Expectations, Luck, and Business Strategy. *Management Science*, *32*(10), 1231-1241. JSTOR. doi:10.1287/mnsc.32.10.1231

Barreto, I. (2009). Dynamic Capabilities: A Review of Past Research and an Agenda for the Future. *Journal of Management*, *36*(1), 256-280. doi:10.1177/0149206309350776

Damodaran, A. (2012). Updated Data. *The Data Page*. Retrieved from http://pages.stern.nyu.edu/~adamodar/

Danneels, E. (2008). Organizational Antecendants of Second-Order Competences. *Strategic Management Journal*, *543*(January), 519-543. John Wiley \& Sons. doi:10.1002/smj

Døving, E., & Gooderham, P. (2008). Dynamic capabilities as antecedents of the scope of related diversification: the case of small firm accountancy practices. *Strategic Management Journal*, *857*(December 2007), 841-857. Wiley.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, *21*(10-11), 1105-1121. John Wiley & Sons. doi:10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E

Galunic, D. C., & Eisenhardt, K. M. (2001). Architectural Innovation and Modular Corporate Forms. *Academy of Management Journal*, *44*(6), 1229-1249. Academy of Management. doi:10.2307/3069398

Gilbert, C. G. (2006). Change in the Presence of Residual Fit: Can Competing Frames Coexist? *Organization Science*, *17*(1), 150-167. INFORMS: Institute for Operations Research. doi:10.1287/orsc.1050.0160

Helfat, C. E. (1997). Know-how and asset complementarity and dynamic capability accumulation: the case of r&d. *Strategic Management Journal*, *18*(5), 339-360. JSTOR. doi:10.1002/(SICI)1097-0266(199705)18:5<339::AID-SMJ883>3.0.CO;2-7

Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M. A., Singh, H., Teece, D. J., & Winter, S. G. (2007). *Dynamic capabilities: Understanding strategic change in organizations*. (C. E. Helfat, S. Finkelstein, W. Mitchell, M. A. Peteraf, H. Singh, D. J. Teece, & S. G. Winter, Eds.)*Strategic Management Journal* (Vol. 18, p. 147). Wiley-Blackwell.

Kale, P., & Singh, H. (2007). Building firm capabilities through learning: The role of the alliance learning process in alliance capability and firm-level alliance success.

Strategic Management Journal, *28*(10), 981-1000. JOHN WILEY & SONS LTD. doi:10.1002/smj.616

Karim, S. (2006). Modularity in Organizational Structure: The Reconfiguration of Internally Developed and Acquired Business Units. *Strategic Management Journal*, *27*(9), 799-823. John Wiley & Sons. doi:10.1002/smj

King, A. A., & Tucci, C. L. (2002). Incumbent entry into new market niches□: The role of experience and manageria ... *Management Science*, *48*(2), 171-186.

Kor, Y. Y., & Mahoney, J. T. (2005). How dynamics, management, and governance of resource deployments influence firm-level performance. *Strategic Management Journal*, *26*(5), 489-496. Wiley Periodicals Inc. doi:10.1002/smj.459

Lampel, J., & Shamsie, J. (2003). Capabilities in Motion□: New Organizational Forms and the Reshaping of the Hollywood Movie Industry * Joseph Lampel and Jamal Shamsie. *World*, *40*(December), 2189-2210. doi:10.1046/j.1467-6486.2003.00417.x

Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, *22*(5), 387-401. Wiley Online Library. doi:10.1002/smj.158

March, J. G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, *2*(1), 71-87. JSTOR. doi:10.1287/orsc.2.1.71

Marcus, A. A., & Anderson, M. H. (2006). A General Dynamic Capability: Does it Propagate Business and Social Competencies in the Retail Food Industry? *Journal of Management Studies*, *43*(1), 19-46. Blackwell Publishing Limited. doi:10.1111/j.1467-6486.2006.00581.x

NCR Corporation. (2012). NCR Corporation Home Page. *2011*. Retrieved January 3, 1BC, from http://www.ncr.com/

Nelson, R. R., & Winter, S. G. (1982). The Schumpeterian Tradeoff Revisited. *American Economic Review*, *72*(1), 114-132. JSTOR. doi:10.2307/1808579

Pavlou, P. A., & El Sawy, O. A. (2011). Understanding the Elusive Black Box of Dynamic Capabilities. *Decision Sciences*, *42*(1), 239-273.

Rindova, V. P., & Kotha, S. (2001). Continuous "Morphing": Competing through Dynamic Capabilities, Form, and Function. *Academy of Management Journal*, *44*(6), 1263. Academy of Management. doi:10.2307/3069400

Rosenbloom, R. S. (2000). Leadership, Capabilities, and Technological Change: The Transformation of NCR in the Electronic Era. *Strategic Management Journal*, *21*(10-11), 1083-1103. John Wiley & Sons. doi:10.1002/1097-0266(200010/11)21:10/11<1083::AID-SMJ127>3.0.CO;2-4

Schumpeter, J. A. (1934). *The theory of economic development: an inquiry into profits, capital, credit, interest, and the business cycle*. (R. Opie, Ed.)*Harvard economic studies* (Vol. 46, p. xii, 255 p.). Harvard University Press.

Slater, S. F., Olson, E. M., & Hult, G. T. M. (2006). The moderating influence of strategic orientation on the strategy formation capability–performance relationship. *Strategic Management Journal*, *27*(12), 1221-1231. John Wiley \& Sons. doi:10.1002/smj.569

Song, M., Droge, C., Hanvanich, S., & Calantone, R. (2005). Marketing and technology resource complementarity: an analysis of their interaction effect in two environmental contexts. *Strategic Management Journal*, *26*(3), 259-276. John Wiley & Sons. doi:10.1002/smj.450

Teece, D. J. (2007). Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance. *Strategic Management Journal*, *1350*(August), 1319-1350. doi:10.1002/smj

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. (G. Dosi, R. R. Nelson, & S. G. Winter, Eds.)*Strategic Management Journal*, *18*(7), 509-533. John Wiley & Sons. doi:10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Value Line, I. (2012). Value Line. Retrieved from http://www.valuelinepro.com/?page=home

Winter, S. G. (2003). Understanding dynamic capabilities. (C. E. Helfat, S. Finkelstein, W. Mitchell, M. A. Peteraf, H. Singh, D. J. Teece, & S. G. Winter, Eds.)*Strategic Management Journal*, *24*(10), 991-995. Wiley Online Library. doi:10.1002/smj.318

Zahra, S. A., Sapienza, H. J., & Davidsson, P. (2006). Entrepreneurship and Dynamic Capabilities: A Review, Model and Research Agenda. *Journal of Management Studies*, *43*(4), 917-955. Wiley Online Library. doi:10.1111/j.1467-6486.2006.00616.x

Zollo, M., & Winter, S. G. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science*, *13*(3), 339-351. JSTOR. doi:10.1287/orsc.13.3.339.2780

Zott, C. (2003). Dynamic capabilities and the emergence of intraindustry differential firm performance: insights from a simulation study. *Strategic Management Journal*, *24*(2), 97-125. John Wiley & Sons. doi:10.1002/smj.288

Zuniga-Vicente, J. A., & Vicente-Lorente, J. D. (2006). Strategic Moves and Organizational Survival in Turbulent Environments: The Case of Spanish Banks (1983-97). *Journal of Management Studies*, *43*(3), 485-519. Wiley-Blackwell. doi:10.1111/j.1467-6486.2006.00599.x

Appendix 1:

Company Name	Ticker	Industry Name	SIC Code	Intercept	Significance (Intercept)	Coefficient	Significance (Coefficient)	Net Change Op. M	Dynamic Capability (B)(x)
VAALCO Energy Inc	EGY	Petroleum (Producing)	1300	12.89	0.30	11.96	0.02	138.13%	22.37%
Pope Resources L.P.	POPE	Paper/Forest Products	2600	6.74	0.45	9.67	0.01	78.55%	18.08%
Sohu.com Inc.	SOHU	Internet	7370	11.75	0.21	7.93	0.03	120.40%	14.83%
Aetrium Inc	ATRM	Electronics	3670	1.57	0.83	6.91	0.03	26.92%	12.92%
Consol. Tomoka Land	CTO	Property Management	6510	0.98	0.91	6.89	0.05	21.53%	12.88%
Akorn Inc.	AKRX	Med Supp Non-Invasive	3842	6.42	0.40	6.89	0.03	70.50%	12.88%
Golden Star Res	GSC.TO	Precious Metals	1041	0.94	0.88	6.79	0.01	20.98%	12.70%
Ramtron International Corp.	RMTR	Semiconductor	3674	7.66	0.27	6.50	0.02	80.97%	12.16%
ABIOMED Inc.	ABMD	Med Supp Invasive	8060	6.56	0.45	6.45	0.06	71.01%	12.06%
Internap Network Services	INAP	Internet	7370	8.00	0.21	6.26	0.02	83.61%	11.71%
Trimedyne Inc.	TMED	Med Supp Invasive	8060	4.62	0.50	6.21	0.03	53.04%	11.61%
Nova Measuring Instruments	NVMI	Precision Instrument	3800	11.21	0.07	6.09	0.01	112.14%	11.39%

Ltd									
Forest Oil	FST	Petroleum (Producing)	1300	0.23	0.95	6.02	0.00	13.18%	11.26%
PCTEL Inc.	PCTI	Telecom. Services	4890	6.51	0.40	5.76	0.06	69.22%	10.77%
Westar Energy	WR	Electric Util. (Central)	4912	4.68	0.33	5.45	0.01	52.19%	10.19%
LookSmart Ltd.	LOOK	Internet	7370	0.32	0.95	5.39	0.02	12.83%	10.08%
Sierra Wireless Inc	SWIR	Wireless Networking	7380	2.71	0.70	5.31	0.06	34.20%	9.93%
Harmonic Inc.	HLIT	Telecom. Equipment	4811	7.25	0.03	5.12	0.00	74.74%	9.57%
Life Partners Holdings Inc	LPHI	Financial Svcs. (Div.)	6100	4.79	0.34	4.98	0.02	52.28%	9.31%
Gilead Sciences	GILD	Drug	2834	9.54	0.14	4.93	0.05	94.96%	9.22%
M & F Worldwide	MFW	Diversified Co.	9913	2.78	0.60	4.80	0.03	33.95%	8.98%
eGain Communications Corp	EGAN	Internet	7370	10.62	0.09	4.80	0.04	104.44%	8.98%
Integrated Silicon Solution	ISSI	Semiconductor	3674	9.86	0.19	4.75	0.09	97.53%	8.88%
American Bio Medica Corp	ABMC	Medical Services	8000	3.45	0.47	4.70	0.02	39.75%	8.80%
Sigma Designs	SIGM	Entertainment Tech	3663	7.02	0.19	4.61	0.03	71.71%	8.62%
Cover-All Tech Inc	COVR	IT Services	7379	1.61	0.78	4.55	0.05	22.89%	8.51%
Amer. Tower 'A'	AMT	Wireless Networking	7380	1.69	0.66	4.48	0.01	23.48%	8.38%
SanDisk Corp.	SNDK	Computers/Peripherals	3573	6.39	0.33	4.44	0.08	65.75%	8.30%
Cypress Semic.	CY	Semiconductor	3674	0.28	0.93	4.39	0.01	10.63%	8.21%

Blue Coat Sys.	BCSI	Computer Software	3579	8.54	0.12	4.38	0.03	84.99%	8.19%
Level 3 Communic.	LVLT	Telecom. Utility	4810	2.53	0.42	4.23	0.00	30.60%	7.91%
AmSurg Corp 'A'	AMSG	Medical Services	8000	1.06	0.74	3.71	0.01	16.38%	6.93%
Zoltek Cos.	ZOLT	Chemical (Diversified)	2813	0.35	0.94	3.68	0.05	9.95%	6.88%
inTEST Corp	INTT	Semiconductor	3674	2.72	0.53	3.55	0.05	31.10%	6.64%
Oplink Communications Inc	OPLK	Telecom. Equipment	4811	8.67	0.12	3.48	0.08	84.48%	6.51%
Elxsi Corporation	ELXS	Diversified Co.	9913	3.73	0.37	3.44	0.04	39.91%	6.43%
EnCana Corp.	ECA	Natural Gas (Div.)	4929	0.45	0.87	3.17	0.01	9.88%	5.93%
Online Resources Corp	ORCC	Internet	7370	2.70	0.43	3.17	0.03	30.21%	5.93%
Global Axcess Corporation	GAXC	Financial Svcs. (Div.)	6100	3.43	0.46	3.06	0.09	36.53%	5.72%
TransAlta Corp.	TA.TO	Power	4900	0.45	0.85	3.03	0.01	9.67%	5.67%
SRS Labs Inc	SRSL	Electronics	3670	2.49	0.53	3.01	0.06	28.00%	5.63%
Comcast Corp Cl A	CMCSA	Cable TV	4840	0.34	0.87	2.92	0.00	8.44%	5.46%
Intel Corp.	INTC	Semiconductor	3674	1.03	0.72	2.91	0.02	14.66%	5.44%
Occidental Petroleum	OXY	Petroleum (Integrated)	2900	2.11	0.50	2.85	0.03	24.25%	5.33%
Netflix Inc.	NFLX	Internet	7370	1.00	0.54	2.84	0.00	14.24%	5.31%
Counsel Corporation	CXS.TO	Medical Services	8000	2.48	0.50	2.82	0.05	27.51%	5.27%
Questar Corp.	STR	Natural Gas (Div.)	4929	0.67	0.80	2.81	0.02	11.20%	5.25%

Int'l Game Tech.	IGT	Hotel/Gaming	7000	0.23	0.89	2.78	0.00	7.23%	5.20%
Pinnacle West Capital	PNW	Electric Utility (West)	4913	0.31	0.85	2.78	0.00	7.99%	5.20%
Cabot Oil & Gas 'A'	COG	Natural Gas (Div.)	4929	1.45	0.05	2.78	0.00	18.20%	5.20%
Texas Pacif. Land Tr	TPL	Petroleum (Producing)	1300	2.76	0.31	2.78	0.02	29.99%	5.20%
Natural Gas Services Group Inc	NGS	Oilfield Svcs/Equip.	3533	0.33	0.89	2.74	0.01	8.04%	5.12%
Pro-Dex Inc Colo.	PDEX	Med Supp Invasive	8060	2.10	0.18	2.72	0.00	23.90%	5.09%
Telecommunication Sys Inc	TSYS	Telecom. Services	4890	4.59	0.16	2.70	0.04	46.35%	5.05%
Wabash National	WNC	Heavy Truck & Equip	3713	1.37	0.62	2.65	0.03	17.20%	4.96%
UniSource Energy	UNS	Electric Utility (West)	4913	0.13	0.95	2.63	0.01	6.09%	4.92%
Synopsys Inc.	SNPS	Computer Software	3579	0.47	0.86	2.63	0.02	9.06%	4.92%
j2 Global	JCOM	Telecom. Services	4890	3.39	0.25	2.60	0.03	35.32%	4.86%
DAC Technologies Group Interna	DAAT	Electronics	3670	3.04	0.34	2.56	0.04	32.13%	4.79%
Omega Protein	OME	Food Processing	2000	0.25	0.94	2.55	0.07	6.93%	4.77%
Digi Int'l	DGII	Computers/Peripherals	3573	0.84	0.48	2.55	0.00	12.27%	4.77%
Southwestern Energy	SWN	Natural Gas (Div.)	4929	0.97	0.67	2.45	0.01	13.24%	4.58%
Bel Fuse Inc.	BELFA	Electronics	3670	1.19	0.45	2.43	0.00	15.21%	4.54%

eBay Inc.	EBAY	Internet	7370	0.72	0.71	2.42	0.01	10.93%	4.53%
Cleco Corp.	CNL	Electric Util. (Central)	4912	0.92	0.67	2.40	0.01	12.67%	4.49%
Pennichuck Corp	PNNW	Water Utility	4941	0.25	0.94	2.37	0.09	6.61%	4.43%
Moody's Corp.	MCO	Information Services	8900	0.52	0.84	2.36	0.03	9.05%	4.41%
Elecsys Corp	ESYS	Aerospace/Defense	3720	1.68	0.52	2.36	0.03	19.53%	4.41%
Belo Corp. 'A'	BLC	Entertainment	7950	1.81	0.60	2.35	0.08	20.66%	4.39%
OmniVision Techn.	OVTI	Entertainment Tech	3663	0.50	0.85	2.32	0.04	8.83%	4.34%
Finisar Corp.	FNSR	Wireless Networking	7380	6.25	0.02	2.32	0.02	60.52%	4.34%
Xerox Corp.	XRX	Office Equip/Supplies	3570	1.56	0.51	2.31	0.02	18.34%	4.32%
Bel Fuse Inc /NJ	BELFB	Electronics	3670	1.22	0.48	2.28	0.01	15.21%	4.26%
Yahoo! Inc.	YHOO	Internet	7370	0.49	0.75	2.27	0.00	8.59%	4.24%
Linear Technology	LLTC	Semiconductor	3674	1.10	0.35	2.27	0.00	14.10%	4.24%
Hallwood Group Inc.	HWG	Oilfield Svcs/Equip.	3533	3.00	0.29	2.24	0.04	31.11%	4.19%
Jarden Corp.	JAH	Household Products	2840	0.88	0.73	2.19	0.04	12.02%	4.10%
FARO Technologies	FARO	Precision Instrument	3800	1.11	0.73	2.19	0.08	14.02%	4.10%
PLX Technology Inc	PLXT	Semiconductor	3674	0.23	0.93	2.18	0.05	6.12%	4.08%
Magic Software Enterprises	MGIC	Computer Software	3579	1.59	0.51	2.18	0.03	18.36%	4.08%
Intersil Corp. 'A'	ISIL	Semiconductor	3674	0.60	0.55	2.14	0.00	9.40%	4.00%
CoStar Group	CSGP	Information Services	8900	1.91	0.46	2.14	0.04	21.18%	4.00%
Middlesex Water	MSEX	Water Utility	4941	0.26	0.84	2.10	0.00	6.21%	3.93%

NiSource Inc.	NI	Natural Gas Utility	4920	0.54	0.73	2.09	0.01	8.76%	3.91%
Qualcomm Inc.	QCOM	Telecom. Equipment	4811	0.74	0.61	2.09	0.00	10.54%	3.91%
Washington Post	WPO	Newspaper	2710	0.51	0.76	2.06	0.01	8.39%	3.85%
Energen Corp.	EGN	Natural Gas (Div.)	4929	0.67	0.60	2.06	0.00	9.87%	3.85%
Silicon Labs.	SLAB	Semiconductor	3674	0.47	0.83	2.04	0.03	8.01%	3.81%
Avista Corp.	AVA	Electric Utility (West)	4913	0.94	0.59	2.04	0.01	12.22%	3.81%
FactSet Research	FDS	Information Services	8900	0.70	0.65	2.02	0.01	10.03%	3.78%
Cameco Corp.	CCO.TO	Metals & Mining (Div.)	1000	0.01	1.00	2.01	0.06	3.78%	3.76%
CenterPoint Energy	CNP	Electric Util. (Central)	4912	0.72	0.73	1.99	0.02	10.15%	3.72%
York Water Co	YORW	Water Utility	4941	1.54	0.31	1.97	0.01	17.46%	3.68%
McClatchy Co.	MNI	Newspaper	2710	0.13	0.93	1.96	0.00	4.79%	3.67%
Saga Communic. 'A'	SGA	Entertainment	7950	0.02	0.98	1.95	0.00	3.82%	3.65%
Viacom Inc. 'B'	VIA/B	Entertainment	7950	2.62	0.28	1.95	0.04	27.18%	3.65%
PPG Inds.	PPG	Chemical (Diversified)	2813	0.01	1.00	1.94	0.00	3.64%	3.63%
Amer. Elec. Power	AEP	Electric Util. (Central)	4912	1.26	0.50	1.92	0.02	14.86%	3.59%
SonoSite Inc.	SONO	Med Supp Non-Invasive	3842	4.13	0.08	1.91	0.03	40.65%	3.57%
Cumulus Media Inc	CMLS	Entertainment	7950	0.56	0.60	1.90	0.00	8.54%	3.55%

Entercom Comm. Corp	ETM	Entertainment	7950	0.05	0.97	1.89	0.01	3.96%	3.53%
TransAct Tech Inc	TACT	Computers/Peripherals	3573	0.80	0.76	1.87	0.07	10.63%	3.50%
ON Semiconductor	ONNN	Semiconductor	3674	1.05	0.35	1.86	0.00	12.83%	3.48%
IDACORP Inc.	IDA	Electric Utility (West)	4913	1.32	0.26	1.86	0.00	15.33%	3.48%
J. Alexander's Corp	JAX	Restaurant	5812	1.42	0.38	1.86	0.01	16.22%	3.48%
Tucows Inc.	TCX	Internet	7370	1.87	0.40	1.86	0.04	20.31%	3.48%
Cedar Fair L.P.	FUN	Recreation	7900	0.68	0.73	1.84	0.03	9.50%	3.44%
Equifax Inc.	EFX	Information Services	8900	0.40	0.78	1.82	0.01	6.98%	3.40%
Channell Commercial Corp	CHNL	Telecom. Equipment	4811	0.04	0.98	1.81	0.02	3.70%	3.38%
Wisconsin Energy	WEC	Electric Util. (Central)	4912	0.07	0.94	1.81	0.00	4.02%	3.38%
Winmark Corp	WINA	Retail (Hardlines)	5999	3.55	0.04	1.80	0.01	35.28%	3.37%
Pfizer Inc.	PFE	Drug	2834	0.17	0.93	1.79	0.04	4.85%	3.35%
Littelfuse Inc.	LFUS	Electrical Equipment	3600	0.54	0.76	1.79	0.02	8.17%	3.35%
Norsk Hydro ADR	NHYDY	Chemical (Diversified)	2813	0.79	0.70	1.78	0.04	10.41%	3.33%
Broadcom Corp. 'A'	BRCM	Telecom. Equipment	4811	2.33	0.40	1.78	0.09	24.27%	3.33%
AGL Resources	GAS	Natural Gas Utility	4920	0.25	0.91	1.77	0.05	5.54%	3.31%
Kansas City South'n	KSU	Railroad	4002	0.69	0.77	1.77	0.06	9.50%	3.31%
Diodes Inc.	DIOD	Semiconductor	3674	0.55	0.72	1.76	0.01	8.15%	3.29%

Pacific Northern Gas Ltd.	PNG.TO	Natural Gas Utility	4920	0.73	0.72	1.73	0.04	9.73%	3.24%
NICE Systems Ltd.	NICE	Telecom. Equipment	4811	1.85	0.34	1.73	0.03	19.85%	3.24%
Juniper Networks	JNPR	Telecom. Equipment	4811	3.01	0.25	1.72	0.08	30.23%	3.22%
National Research Corp	NRCI	Healthcare Information	7375	0.24	0.90	1.71	0.04	5.28%	3.20%
EDP - Energias de Portugal	EDPFY	Power	4900	0.26	0.89	1.70	0.03	5.53%	3.18%
National Fuel Gas	NFG	Natural Gas (Div.)	4929	0.70	0.75	1.69	0.06	9.46%	3.16%
Can. National Railway	CNI	Railroad	4002	0.78	0.44	1.66	0.00	10.06%	3.10%
Micrel Inc.	MCRL	Electronics	3670	1.69	0.48	1.65	0.08	18.23%	3.09%
Harley-Davidson	HOG	Recreation	7900	0.54	0.70	1.63	0.01	7.85%	3.05%
McGraw-Hill	MHP	Publishing	2700	0.67	0.44	1.63	0.00	9.03%	3.05%
NSTAR	NST	Electric Utility (East)	4911	0.29	0.78	1.61	0.00	5.59%	3.01%
Timken Co.	TKR	Metal Fabricating	3400	1.41	0.34	1.61	0.01	15.65%	3.01%
Microsoft Corp.	MSFT	Computer Software	3579	0.53	0.79	1.59	0.05	7.68%	2.97%
Price (T. Rowe) Group	TROW	Financial Svcs. (Div.)	6100	1.83	0.20	1.59	0.01	19.39%	2.97%
Northwest Nat. Gas	NWN	Natural Gas Utility	4920	0.04	0.96	1.58	0.00	3.30%	2.95%
Exelon Corp.	EXC	Electric Utility (East)	4911	0.16	0.93	1.58	0.03	4.36%	2.95%
Texas Instruments	TXN	Semiconductor	3674	1.04	0.45	1.58	0.01	12.23%	2.95%
Coach Inc.	COH	Retail (Hardlines)	5999	1.54	0.30	1.58	0.01	16.81%	2.95%
Graco Inc.	GGG	Machinery	3500	0.09	0.95	1.57	0.02	3.77%	2.94%

Copart Inc.	CPRT	Retail Automotive	5531	0.83	0.52	1.57	0.01	10.37%	2.94%
Tyler Technologies Corp.	TYL	Diversified Co.	9913	1.19	0.33	1.57	0.01	13.59%	2.94%
Utah Medical Prods.	UTMD	Med Supp Invasive	8060	0.73	0.67	1.55	0.03	9.47%	2.90%
Norfolk Southern	NSC	Railroad	4002	1.01	0.34	1.55	0.00	11.98%	2.90%
Qualmark Corp	QMRK	Electronics	3670	0.56	0.78	1.54	0.06	7.85%	2.88%
United Capital Corp.	UCAP	Diversified Co.	9913	2.27	0.19	1.54	0.03	23.22%	2.88%
Shiloh Inds.	SHLO	Steel	3311	0.08	0.97	1.53	0.04	3.49%	2.86%
Choice Hotels Int'l	CHH	Hotel/Gaming	7000	1.10	0.50	1.50	0.03	12.63%	2.81%
Heidrick & Struggles	HSII	Human Resources	7363	1.25	0.48	1.50	0.04	13.98%	2.81%
Techne Corp.	TECH	Biotechnology	2830	2.07	0.16	1.48	0.02	21.36%	2.77%
Stericycle Inc.	SRCL	Environmental	4953	1.21	0.28	1.46	0.00	13.62%	2.73%
CARBO Ceramics	CRR	Oilfield Svcs/Equip.	3533	0.15	0.79	1.45	0.00	4.05%	2.71%
Lifeway Foods Inc.	LWAY	Food Processing	2000	0.13	0.94	1.44	0.04	3.85%	2.69%
Franklin Covey	FC	Industrial Services	7300	2.28	0.21	1.43	0.04	23.12%	2.67%
California Water	CWT	Water Utility	4941	0.28	0.78	1.42	0.00	5.15%	2.66%
UNITIL Corp.	UTL	Electric Utility (East)	4911	0.04	0.94	1.41	0.00	2.99%	2.64%
Weight Watchers	WTW	Retail (Hardlines)	5999	0.58	0.77	1.41	0.07	7.84%	2.64%
Nortel Networks	NRTLQ	Telecom. Equipment	4811	2.72	0.13	1.41	0.04	27.14%	2.64%
Amer. States Water	AWR	Water Utility	4941	0.05	0.97	1.40	0.01	2.99%	2.62%
Fair Isaac	FICO	IT Services	7379	0.06	0.97	1.39	0.04	3.07%	2.60%

II-VI Inc.	IIVI	Precision Instrument	3800	0.39	0.54	1.39	0.00	6.11%	2.60%
Strayer Education	STRA	Educational Services	8299	0.84	0.54	1.37	0.02	10.09%	2.56%
Vectren Corp.	VVC	Electric Util. (Central)	4912	0.63	0.56	1.36	0.01	8.20%	2.54%
Gen-Probe	GPRO	Biotechnology	2830	0.74	0.70	1.36	0.08	9.19%	2.54%
TII Network Tech Inc.	TIII	Electrical Equipment	3600	1.83	0.21	1.36	0.02	19.00%	2.54%
Southern Union	SUG	Oil/Gas Distribution	4610	0.20	0.87	1.35	0.01	4.32%	2.52%
Korn/Ferry Int'l	KFY	Human Resources	7363	1.33	0.28	1.35	0.01	14.48%	2.52%
Unisys Corp.	UIS	Computers/Peripherals	3573	0.06	0.98	1.34	0.07	2.98%	2.51%
Entergy Corp.	ETR	Electric Util. (Central)	4912	0.27	0.84	1.34	0.02	4.96%	2.51%
Medtronic Inc.	MDT	Med Supp Invasive	8060	0.30	0.80	1.34	0.01	5.15%	2.51%
Orbital Sciences	ORB	Aerospace/Defense	3720	1.02	0.37	1.34	0.01	11.62%	2.51%
Union Pacific	UNP	Railroad	4002	1.09	0.51	1.34	0.05	12.28%	2.51%
3M Company	MMM	Diversified Co.	9913	0.66	0.47	1.33	0.00	8.42%	2.49%
Plantronics Inc.	PLT	Electronics	3670	0.64	0.75	1.30	0.09	8.15%	2.43%
Sigma-Aldrich	SIAL	Chemical (Specialty)	2820	0.53	0.38	1.27	0.00	7.13%	2.37%
Lionbridge Technologies Inc	LIOX	IT Services	7379	0.70	0.36	1.27	0.00	8.67%	2.37%
Kyocera Corp. ADR	KYO	Foreign Electronics	9975	0.18	0.87	1.26	0.01	3.98%	2.36%
Hershey Co.	HSY	Food Processing	2000	0.39	0.62	1.25	0.00	5.84%	2.34%
Autoliv Inc.	ALV	Auto Parts	3716	0.48	0.55	1.25	0.00	6.63%	2.34%

Cerner Corp.	CERN	Healthcare Information	7375	0.56	0.62	1.25	0.01	7.33%	2.34%
SMTC Corp.	SMTX	Semiconductor	3674	1.34	0.14	1.25	0.00	14.34%	2.34%
Zimmer Holdings	ZMH	Med Supp Invasive	8060	1.01	0.47	1.24	0.03	11.38%	2.32%
Formula Systems (1985) Ltd	FORTY	Telecom. Services	4890	1.52	0.06	1.22	0.00	15.90%	2.28%
Analysts Int'l	ANLY	IT Services	7379	0.60	0.57	1.22	0.01	7.65%	2.28%
Albemarle Corp.	ALB	Chemical (Diversified)	2813	0.23	0.84	1.20	0.01	4.25%	2.24%
Meredith Corp.	MDP	Publishing	2700	0.35	0.58	1.20	0.00	5.40%	2.24%
Coca-Cola	KO	Beverage	2080	0.39	0.62	1.20	0.00	5.78%	2.24%
Laboratory Corp.	LH	Medical Services	8000	0.81	0.36	1.19	0.00	9.47%	2.23%
Harris Interactive Inc	HPOL	Internet	7370	0.02	0.99	1.18	0.05	2.35%	2.21%
Deere & Co.	DE	Heavy Truck & Equip	3713	1.61	0.19	1.18	0.02	16.71%	2.21%
Pizza Inn Holdings Inc.	PZZI	Retail/Wholesale Food	5400	0.16	0.92	1.17	0.06	3.62%	2.19%
Fossil Inc.	FOSL	Retail (Hardlines)	5999	0.76	0.28	1.17	0.00	9.03%	2.19%
Piedmont Natural Gas	PNY	Natural Gas Utility	4920	0.01	0.99	1.16	0.04	2.24%	2.17%
Tiffany & Co.	TIF	Retail (Hardlines)	5999	0.41	0.58	1.16	0.00	5.84%	2.17%
Xilinx Inc.	XLNX	Semiconductor	3674	1.55	0.24	1.16	0.03	16.07%	2.17%
Apollo Group `A'	APOL	Educational Services	8299	0.93	0.60	1.16	0.09	10.53%	2.17%

DaVita Inc.	DVA	Medical Services	8000	0.15	0.92	1.15	0.05	3.48%	2.15%
Public Serv. Enterprise	PEG	Electric Utility (East)	4911	0.63	0.71	1.15	0.09	7.81%	2.15%
Kellogg	K	Food Processing	2000	0.28	0.76	1.14	0.01	4.58%	2.13%
Gap (The) Inc.	GPS	Retail (Softlines)	5600	0.94	0.35	1.14	0.01	10.60%	2.13%
Edison Int'l	EIX	Electric Utility (West)	4913	0.62	0.66	1.12	0.05	7.66%	2.09%
Young Innovations	YDNT	Med Supp Non-Invasive	3842	0.23	0.85	1.11	0.03	4.11%	2.08%
Kaydon Corp.	KDN	Machinery	3500	0.29	0.75	1.11	0.01	4.66%	2.08%
Johnson & Johnson	JNJ	Med Supp Non-Invasive	3842	0.44	0.65	1.11	0.01	6.01%	2.08%
Fiserv Inc.	FISV	IT Services	7379	1.11	0.27	1.11	0.01	12.05%	2.08%
Int'l Flavors & Frag.	IFF	Chemical (Specialty)	2820	0.05	0.93	1.10	0.00	2.50%	2.06%
Paychex Inc.	PAYX	IT Services	7379	0.79	0.53	1.10	0.03	9.11%	2.06%
IEC Electronics Corp	IEC	Semiconductor	3674	1.16	0.44	1.10	0.06	12.52%	2.06%
Great Lakes Aviation	GLUX	Air Transport	4510	0.39	0.81	1.09	0.09	5.51%	2.04%
Clorox Co.	CLX	Household Products	2840	0.07	0.95	1.08	0.03	2.61%	2.02%
Allied Motion Technologies In	AMOT	Precision Instrument	3800	0.14	0.92	1.08	0.07	3.27%	2.02%
Matthews Int'l	MATW	Funeral Services	7261	0.03	0.95	1.07	0.00	2.29%	2.00%
Oceaneering Int'l	OII	Oilfield Svcs/Equip.	3533	0.09	0.94	1.07	0.04	2.83%	2.00%

IDEXX Labs.	IDXX	Med Supp Non-Invasive	3842	0.38	0.52	1.07	0.00	5.42%	2.00%
Edwards Lifesciences	EW	Med Supp Invasive	8060	0.55	0.41	1.07	0.00	6.95%	2.00%
Dun & Bradstreet	DNB	Information Services	8900	1.10	0.42	1.07	0.05	11.88%	2.00%
Middleby Corp. (The)	MIDD	Machinery	3500	1.36	0.25	1.06	0.03	14.18%	1.98%
Schweitzer-Mauduit Int'l	SWM	Tobacco	2085	0.56	0.70	1.05	0.07	7.02%	1.96%
PNM Resources	PNM	Electric Utility (West)	4913	0.09	0.93	1.04	0.02	2.71%	1.94%
Kadant Inc.	KAI	Diversified Co.	9913	0.05	0.97	1.03	0.04	2.33%	1.93%
Williams-Sonoma	WSM	Retail (Hardlines)	5999	0.13	0.90	1.02	0.02	3.05%	1.91%
Gen'l Mills	GIS	Food Processing	2000	0.35	0.69	1.02	0.01	5.04%	1.91%
Genesee & Wyoming	GWR	Railroad	4002	0.94	0.20	1.02	0.00	10.32%	1.91%
Alliance Data Sys.	ADS	Information Services	8900	2.44	0.10	1.02	0.06	23.81%	1.91%
South Jersey Inds.	SJI	Natural Gas Utility	4920	0.50	0.74	1.01	0.08	6.34%	1.89%
Bio-Rad Labs. 'A'	BIO	Med Supp Non-Invasive	3842	0.06	0.94	1.00	0.01	2.40%	1.87%
Global Payments	GPN	Financial Svcs. (Div.)	6100	0.11	0.90	1.00	0.01	2.88%	1.87%
Versar Inc.	VSR	Environmental	4953	0.15	0.90	1.00	0.04	3.19%	1.87%
FMC Corp.	FMC	Chemical (Basic)	2810	0.31	0.77	1.00	0.03	4.63%	1.87%
Limited Brands	LTD	Retail (Softlines)	5600	0.60	0.33	1.00	0.00	7.26%	1.87%
CSX Corp.	CSX	Railroad	4002	1.57	0.05	1.00	0.00	16.03%	1.87%

UIL Holdings	UIL	Electric Utility (East)	4911	0.09	0.94	0.99	0.04	2.66%	1.85%
Helen of Troy Ltd.	HELE	Toiletries/Cosmetics	2844	0.49	0.60	0.99	0.02	6.21%	1.85%
Imperial Oil Ltd.	IMO	Petroleum (Integrated)	2900	0.52	0.70	0.99	0.07	6.55%	1.85%
Quality Systems	QSII	Healthcare Information	7375	1.21	0.24	0.99	0.02	12.75%	1.85%
ABB Ltd	ABB	Diversified Co.	9913	1.86	0.14	0.99	0.04	18.53%	1.85%
W.R. Grace & Co.	GRA	Chemical (Diversified)	2813	0.12	0.86	0.98	0.00	2.94%	1.83%
Kirby Corp.	KEX	Maritime	4400	0.25	0.80	0.98	0.02	4.06%	1.83%
National Instruments	NATI	Precision Instrument	3800	0.16	0.87	0.97	0.02	3.24%	1.81%
Benchmark Electronics	BHE	Electronics	3670	0.82	0.36	0.97	0.01	9.22%	1.81%
Oracle Corp.	ORCL	Computer Software	3579	1.77	0.20	0.97	0.07	17.77%	1.81%
Lexmark Int'l `A'	LXK	Office Equip/Supplies	3570	0.05	0.94	0.96	0.00	2.24%	1.80%
Illinois Tool Works	ITW	Metal Fabricating	3400	0.20	0.73	0.96	0.00	3.59%	1.80%
Chevron Corp.	CVX	Petroleum (Integrated)	2900	0.92	0.30	0.96	0.01	10.09%	1.80%
Starbucks Corp.	SBUX	Restaurant	5812	0.08	0.87	0.94	0.00	2.52%	1.76%
Hasbro Inc.	HAS	Recreation	7900	0.58	0.45	0.94	0.01	6.93%	1.76%
Quest Diagnostics	DGX	Medical Services	8000	0.82	0.32	0.94	0.01	9.15%	1.76%

Stryker Corp.	SYK	Med Supp Invasive	8060	0.90	0.21	0.94	0.00	9.83%	1.76%
Urban Outfitters	URBN	Retail (Softlines)	5600	1.06	0.35	0.93	0.04	11.23%	1.74%
Teva Pharmac. (ADR)	TEVA	Drug	2834	1.10	0.12	0.93	0.00	11.60%	1.74%
Exponent Inc	EXPO	Industrial Services	7300	0.76	0.45	0.92	0.03	8.55%	1.72%
Peet's Coffee & Tea	PEET	Food Processing	2000	0.19	0.81	0.90	0.01	3.35%	1.68%
Int'l Business Mach.	IBM	Computers/Peripherals	3573	0.55	0.53	0.89	0.02	6.58%	1.66%
Nordson Corp.	NDSN	Machinery	3500	1.55	0.16	0.89	0.04	15.63%	1.66%
Yum! Brands	YUM	Restaurant	5812	0.28	0.59	0.88	0.00	4.12%	1.65%
AutoZone Inc.	AZO	Retail Automotive	5531	0.73	0.24	0.88	0.00	8.17%	1.65%
Comtech Telecom.	CMTL	Telecom. Equipment	4811	0.75	0.51	0.88	0.05	8.37%	1.65%
Jones Lang LaSalle	JLL	Property Management	6510	0.34	0.79	0.87	0.09	4.70%	1.63%
Interactive Intelligence Grou	ININ	Computer Software	3579	2.38	0.03	0.87	0.03	23.08%	1.63%
Allied Hlthcare Prod	AHPI	Med Supp Non-Invasive	3842	0.10	0.91	0.86	0.02	2.48%	1.61%
Ball Corp.	BLL	Packaging & Container	2640	0.15	0.73	0.86	0.00	2.93%	1.61%
Henry (Jack) & Assoc.	JKHY	IT Services	7379	0.22	0.58	0.86	0.00	3.57%	1.61%
AMERIGROUP Corp	AGP	Medical Services	8000	0.24	0.60	0.85	0.00	3.74%	1.58%
Becton Dickinson	BDX	Med Supp Invasive	8060	0.23	0.76	0.84	0.01	3.60%	1.57%

Roper Inds.	ROP	Machinery	3500	0.68	0.16	0.84	0.00	7.69%	1.57%
Dollar Tree Inc.	DLTR	Retail Store	5300	0.14	0.80	0.83	0.00	2.74%	1.55%
Automatic Data Proc.	ADP	IT Services	7379	0.13	0.88	0.82	0.02	2.66%	1.53%
PetSmart Inc.	PETM	Retail (Hardlines)	5999	0.30	0.42	0.82	0.00	4.26%	1.53%
Danaher Corp.	DHR	Diversified Co.	9913	0.38	0.42	0.82	0.00	4.91%	1.53%
Ikonics Corp	IKNX	Chemical (Specialty)	2820	0.79	0.18	0.81	0.00	8.63%	1.51%
Park Electrochemical	PKE	Chemical (Specialty)	2820	2.15	0.08	0.81	0.07	20.82%	1.51%
Drew Industries	DW	Auto Parts	3716	0.03	0.98	0.80	0.04	1.72%	1.50%
Cognizant Technology	CTSH	IT Services	7379	0.28	0.72	0.80	0.02	3.98%	1.50%
Leon's Furniture Ltd.	LNF.TO	Furn/Home Furnishings	2500	0.49	0.49	0.80	0.01	5.89%	1.50%
Valspar Corp.	VAL	Chemical (Specialty)	2820	0.51	0.26	0.80	0.00	6.06%	1.50%
Gartner Inc.	IT	Information Services	8900	0.06	0.95	0.78	0.06	2.01%	1.46%
Lilly (Eli)	LLY	Drug	2834	0.08	0.92	0.78	0.02	2.16%	1.46%
Inter Parfums	IPAR	Toiletries/Cosmetics	2844	0.14	0.68	0.77	0.00	2.73%	1.44%
Fresenius Medical Care	FMS	Medical Services	8000	0.38	0.47	0.77	0.00	4.85%	1.44%
Raven Inds.	RAVN	Diversified Co.	9913	0.98	0.18	0.77	0.01	10.22%	1.44%
Bed Bath & Beyond	BBBY	Retail (Hardlines)	5999	0.52	0.48	0.76	0.02	6.13%	1.42%
Dover Corp.	DOV	Machinery	3500	0.55	0.39	0.76	0.01	6.37%	1.42%
Silgan Holdings	SLGN	Packaging &	2640	0.07	0.88	0.73	0.00	2.00%	1.37%

		Container							
Airgas Inc.	ARG	Chemical (Specialty)	2820	0.31	0.45	0.73	0.00	4.18%	1.37%
Disney (Walt)	DIS	Entertainment	7950	0.96	0.21	0.72	0.02	9.97%	1.35%
Nu Skin Enterprises	NUS	Toiletries/Cosmetics	2844	0.61	0.37	0.71	0.02	6.78%	1.33%
Smucker (J.M.)	SJM	Food Processing	2000	0.98	0.34	0.71	0.07	10.13%	1.33%
IDEX Corp.	IEX	Machinery	3500	0.43	0.46	0.69	0.01	5.14%	1.29%
Cash Amer. Int'l	CSH	Financial Svcs. (Div.)	6100	0.72	0.11	0.69	0.00	7.75%	1.29%
ITT Educational	ESI	Educational Services	8299	2.95	0.01	0.69	0.05	27.83%	1.29%
Monro Muffler Brake	MNRO	Retail Automotive	5531	0.14	0.77	0.68	0.00	2.49%	1.27%
UGI Corp.	UGI	Natural Gas Utility	4920	0.27	0.76	0.68	0.06	3.67%	1.27%
Emerson Electric	EMR	Electrical Equipment	3600	0.32	0.36	0.68	0.00	4.14%	1.27%
Colgate-Palmolive	CL	Household Products	2840	0.72	0.30	0.68	0.02	7.76%	1.27%
Rocky Mountain Choc Factory	RMCF	Food Processing	2000	0.45	0.57	0.67	0.04	5.27%	1.25%
UFP Technologies Inc	UFPT	Packaging & Container	2640	1.08	0.09	0.67	0.01	10.93%	1.25%
Polaris Inds.	PII	Recreation	7900	0.12	0.82	0.66	0.01	2.34%	1.23%
High Liner Foods Inc	HLF.TO	Food Processing	2000	0.17	0.77	0.66	0.01	2.79%	1.23%
O'Reilly Automotive	ORLY	Retail Automotive	5531	0.46	0.29	0.66	0.00	5.38%	1.23%
Rockwell Automation	ROK	Electrical Equipment	3600	0.50	0.59	0.66	0.07	5.70%	1.23%

Exxon Mobil Corp.	XOM	Petroleum (Integrated)	2900	0.10	0.90	0.65	0.05	2.11%	1.22%
Ametek Inc.	AME	Diversified Co.	9913	0.70	0.07	0.65	0.00	7.52%	1.21%
RPM Int'l	RPM	Chemical (Specialty)	2820	0.07	0.88	0.64	0.01	1.85%	1.20%
Procter & Gamble	PG	Household Products	2840	0.21	0.77	0.64	0.03	3.08%	1.20%
Dentsply Int'l	XRAY	Med Supp Invasive	8060	0.29	0.55	0.64	0.01	3.83%	1.20%
ConAgra Foods	CAG	Food Processing	2000	0.51	0.42	0.64	0.02	5.74%	1.20%
Rollins Inc.	ROL	Industrial Services	7300	0.78	0.04	0.64	0.00	8.17%	1.20%
Fastenal Co.	FAST	Retail Building Supply	5211	0.91	0.23	0.64	0.04	9.40%	1.20%
Aon Corp.	AON	Financial Svcs. (Div.)	6100	0.43	0.48	0.64	0.02	5.03%	1.19%
Bon-Ton Stores	BONT	Retail Store	5300	0.01	0.99	0.63	0.09	1.25%	1.18%
Darden Restaurants	DRI	Restaurant	5812	0.04	0.88	0.63	0.00	1.50%	1.18%
Campbell Soup	CPB	Food Processing	2000	0.10	0.85	0.63	0.01	2.09%	1.18%
Accenture Plc	ACN	IT Services	7379	0.38	0.43	0.63	0.01	4.63%	1.18%
Brady Corp.	BRC	Diversified Co.	9913	0.44	0.51	0.63	0.02	5.09%	1.18%
United Technologies	UTX	Diversified Co.	9913	0.13	0.74	0.62	0.00	2.30%	1.16%
Tennant Co.	TNC	Machinery	3500	0.18	0.75	0.62	0.02	2.80%	1.16%
Kohl's Corp.	KSS	Retail Store	5300	0.08	0.90	0.61	0.02	1.82%	1.14%
Lauder (Estee)	EL	Toiletries/Cosmetics	2844	0.25	0.74	0.61	0.05	3.39%	1.14%

Deckers Outdoor	DECK	Shoe	3140	2.04	0.03	0.61	0.05	19.49%	1.14%
Parker-Hannifin	PH	Diversified Co.	9913	0.47	0.54	0.59	0.06	5.34%	1.10%
McCormick & Co.	MKC	Food Processing	2000	0.56	0.33	0.59	0.02	6.09%	1.10%
Atrion Corp	ATRI	Med Supp Non-Invasive	3842	1.64	0.01	0.58	0.01	15.87%	1.08%
Home Depot	HD	Retail Building Supply	5211	0.11	0.85	0.57	0.02	2.06%	1.07%
Quaker Chemical	KWR	Chemical (Specialty)	2820	0.15	0.85	0.57	0.08	2.43%	1.07%
Toro Co.	TTC	Machinery	3500	0.19	0.65	0.57	0.01	2.81%	1.07%
Finish Line (The)	FINL	Retail (Softlines)	5600	0.46	0.53	0.57	0.05	5.23%	1.07%
St. Jude Medical	STJ	Med Supp Invasive	8060	0.57	0.51	0.57	0.09	6.20%	1.07%
Church & Dwight	CHD	Household Products	2840	1.04	0.05	0.57	0.01	10.42%	1.07%
Hibbett Sports	HIBB	Retail (Hardlines)	5999	0.39	0.39	0.56	0.01	4.58%	1.05%
CLARCOR Inc.	CLC	Packaging & Container	2640	0.44	0.31	0.56	0.01	4.97%	1.05%
Varian Medical Sys.	VAR	Med Supp Invasive	8060	1.07	0.16	0.56	0.05	10.64%	1.05%
MICROS Systems	MCRS	Computer Software	3579	1.51	0.00	0.56	0.00	14.62%	1.05%
Greif Inc.	GEF	Packaging & Container	2640	0.02	0.96	0.55	0.02	1.25%	1.03%
Omnicom Group	OMC	Advertising	7310	0.03	0.96	0.55	0.04	1.26%	1.03%

Actuant Corp.	ATU	Heavy Truck & Equip	3713	0.28	0.46	0.55	0.00	3.53%	1.03%
V.F. Corp.	VFC	Apparel	2300	0.43	0.30	0.55	0.00	4.87%	1.03%
Big Lots Inc.	BIG	Retail Store	5300	0.55	0.39	0.55	0.04	6.00%	1.03%
EZCORP Inc.	EZPW	Financial Svcs. (Div.)	6100	1.39	0.09	0.55	0.06	13.56%	1.03%
Ross Stores	ROST	Retail (Softlines)	5600	0.47	0.44	0.54	0.03	5.25%	1.01%
Sherwin-Williams	SHW	Retail Building Supply	5211	0.10	0.84	0.53	0.02	1.88%	0.99%
Badger Meter	BMI	Precision Instrument	3800	1.00	0.19	0.53	0.06	9.96%	0.99%
Oxford Inds.	OXM	Apparel	2300	0.09	0.88	0.52	0.04	1.79%	0.97%
Target Corp.	TGT	Retail Store	5300	0.10	0.75	0.52	0.00	1.83%	0.97%
Ennis Inc.	EBF	Office Equip/Supplies	3570	0.28	0.63	0.52	0.03	3.48%	0.97%
RCM Technologies Inc.	RCMT	Industrial Services	7300	0.13	0.86	0.51	0.08	2.13%	0.95%
Pentair Inc.	PNR	Diversified Co.	9913	0.28	0.55	0.51	0.01	3.46%	0.95%
Omnicare Inc.	OCR	Pharmacy Services	5910	0.06	0.89	0.50	0.01	1.44%	0.94%
Oshkosh Corp.	OSK	Heavy Truck & Equip	3713	0.08	0.89	0.50	0.04	1.66%	0.94%
Canada Bread Ltd	CBY.TO	Food Processing	2000	0.10	0.86	0.50	0.04	1.85%	0.94%
UnitedHealth Group	UNH	Medical Services	8000	0.28	0.63	0.50	0.04	3.51%	0.94%
Hubbell Inc. 'B'	HUB/B	Electrical Equipment	3600	0.48	0.23	0.49	0.01	5.21%	0.92%
Nordstrom Inc.	JWN	Retail Store	5300	0.66	0.09	0.49	0.00	6.82%	0.92%
Patterson Cos.	PDCO	Med Supp Non-	3842	0.35	0.34	0.48	0.01	4.10%	0.90%

		Invasive							
Tyson Foods 'A'	TSN	Food Processing	2000	0.08	0.92	0.47	0.09	1.55%	0.88%
Calavo Growers Inc.	CVGW	Food Processing	2000	0.45	0.45	0.47	0.05	4.92%	0.88%
Northrop Grumman	NOC	Aerospace/Defense	3720	0.06	0.91	0.46	0.04	1.40%	0.86%
Staples Inc.	SPLS	Office Equip/Supplies	3570	0.12	0.68	0.46	0.00	1.97%	0.86%
Neogen Corp.	NEOG	Environmental	4953	1.04	0.15	0.46	0.09	10.20%	0.86%
The Coast Distrib. Sys.	CRV	Auto Parts	3716	0.15	0.81	0.45	0.08	2.18%	0.84%
Toromont Industries Ltd.	TIH.TO	Machinery	3500	0.28	0.34	0.45	0.00	3.37%	0.84%
SL Inds. Inc.	SLI	Electrical Equipment	3600	0.29	0.66	0.45	0.09	3.48%	0.84%
Grainger (W.W.)	GWW	Electrical Equipment	3600	0.56	0.18	0.45	0.01	5.87%	0.84%
TJX Companies	TJX	Retail (Softlines)	5600	0.31	0.48	0.44	0.02	3.62%	0.82%
Gorman-Rupp Co.	GRC	Heavy Truck & Equip	3713	0.36	0.53	0.44	0.05	4.00%	0.82%
Hormel Foods	HRL	Food Processing	2000	0.23	0.50	0.43	0.01	2.85%	0.80%
Dick's Sporting Goods	DKS	Retail (Hardlines)	5999	0.35	0.17	0.43	0.00	3.91%	0.80%
L-3 Communic.	LLL	Aerospace/Defense	3720	0.09	0.84	0.42	0.03	1.59%	0.79%
Teledyne Technologies	TDY	Aerospace/Defense	3720	0.69	0.07	0.42	0.01	7.01%	0.79%
Smith (A.O.)	AOS	Machinery	3500	0.19	0.72	0.41	0.05	2.47%	0.77%
Penney (J.C.)	JCP	Retail Store	5300	0.34	0.56	0.41	0.07	3.80%	0.77%
Bio-Reference Labs Inc	BRLI	Medical Services	8000	0.36	0.44	0.41	0.03	4.00%	0.77%
iParty Corp.	IPT	Internet	7370	0.24	0.62	0.40	0.04	2.92%	0.75%

Amazon.com	AMZN	Internet	7370	0.25	0.62	0.40	0.05	2.99%	0.75%
Thomas & Betts	TNB	Electrical Equipment	3600	0.66	0.29	0.40	0.08	6.65%	0.75%
Carlisle Cos.	CSL	Diversified Co.	9913	0.21	0.61	0.39	0.03	2.61%	0.73%
NIKE Inc. 'B'	NKE	Shoe	3140	0.43	0.45	0.38	0.09	4.57%	0.71%
Hubbell Inc 'A'	HUB/A	Electrical Equipment	3600	0.47	0.22	0.38	0.02	4.92%	0.71%
Landec Corp	LNDC	Chemical (Basic)	2810	0.28	0.60	0.37	0.08	3.18%	0.69%
Lennox Int'l	LII	Machinery	3500	0.39	0.40	0.37	0.05	4.21%	0.69%
Maple Leaf Foods Inc.	MFI.TO	Food Processing	2000	0.05	0.89	0.36	0.02	1.12%	0.67%
New Jersey Resources	NJR	Natural Gas Utility	4920	0.21	0.61	0.36	0.03	2.53%	0.67%
Donaldson Co.	DCI	Machinery	3500	0.34	0.46	0.35	0.06	3.66%	0.65%
Best Buy Co.	BBY	Retail (Hardlines)	5999	0.02	0.90	0.34	0.00	0.84%	0.64%
Tractor Supply	TSCO	Retail Building Supply	5211	0.28	0.39	0.34	0.02	3.16%	0.64%
Wolverine World Wide	WWW	Shoe	3140	0.29	0.24	0.34	0.00	3.26%	0.64%
Natl Beverage	FIZZ	Beverage	2080	0.57	0.16	0.34	0.03	5.71%	0.64%
Wal-Mart Stores	WMT	Retail Store	5300	0.17	0.22	0.32	0.00	2.13%	0.60%
Genuine Parts	GPC	Auto Parts	3716	0.11	0.73	0.31	0.02	1.55%	0.58%
Arden Group 'A'	ARDNA	Retail/Wholesale Food	5400	0.26	0.57	0.30	0.09	2.93%	0.57%
Flowers Foods	FLO	Food Processing	2000	0.03	0.92	0.30	0.04	0.87%	0.56%

Walgreen Co.	WAG	Pharmacy Services	5910	0.08	0.66	0.30	0.00	1.25%	0.56%
Sysco Corp.	SYY	Retail/Wholesale Food	5400	0.06	0.77	0.28	0.01	1.11%	0.52%
Waters Corp.	WAT	Precision Instrument	3800	0.16	0.67	0.28	0.07	2.00%	0.52%
Schein (Henry)	HSIC	Med Supp Non-Invasive	3842	0.23	0.55	0.28	0.06	2.57%	0.52%
United Stationers	USTR	Office Equip/Supplies	3570	0.24	0.18	0.28	0.00	2.67%	0.52%
CVS Caremark Corp.	CVS	Pharmacy Services	5910	0.28	0.32	0.22	0.05	2.93%	0.41%
PSS World Medical	PSSI	Med Supp Non-Invasive	3842	0.52	0.00	0.22	0.00	5.07%	0.41%
Jacobs Engineering	JEC	Engineering & Const	1629	0.08	0.74	0.21	0.03	1.08%	0.39%
ScanSource	SCSC	Computers/Peripherals	3573	0.12	0.45	0.20	0.01	1.45%	0.37%
PC Connection	PCCC	Retail (Hardlines)	5999	0.06	0.81	0.19	0.05	0.84%	0.36%
AutoNation Inc.	AN	Retail Automotive	5531	0.18	0.21	0.16	0.01	1.95%	0.30%
Brightpoint Inc.	CELL	Wireless Networking	7380	0.25	0.11	0.16	0.01	2.56%	0.30%
Village Super Market	VLGEA	Retail/Wholesale Food	5400	0.12	0.35	0.15	0.01	1.35%	0.28%
Arrow Electronics	ARW	Electronics	3670	0.12	0.56	0.15	0.08	1.39%	0.27%
AmerisourceBergen	ABC	Med Supp Non-	3842	0.00	0.97	0.12	0.00	0.23%	0.22%

		Invasive							
Spartan Stores	SPTN	Retail/Wholesale Food	5400	0.09	0.58	0.11	0.08	1.04%	0.21%
Tech Data	TECD	Computers/Peripherals	3573	0.01	0.95	0.06	0.09	0.17%	0.11%
Ingram Micro 'A'	IM	Computers/Peripherals	3573	0.07	0.20	0.05	0.02	0.71%	0.09%
SED Intl Hldgs	SED	Computers/Peripherals	3573	0.17	0.31	-0.14	0.04	1.25%	-0.26%
Wet Seal `A'	WTSLA	Retail (Softlines)	5600	0.37	0.91	-2.56	0.05	-1.39%	-4.79%
CryoLife Inc.	CRY	Med Supp Invasive	8060	0.53	0.91	-3.35	0.08	-1.43%	-6.26%
Transgenomic Inc	TBIO	Biotechnology	2830	2.12	0.51	-3.37	0.02	12.88%	-6.30%
MicroFinancial Inc	MFI	Financial Svcs. (Div.)	6100	0.81	0.87	-3.45	0.09	0.90%	-6.45%
Multimedia Games Inc	MGAM	Recreation	7900	-1.99	0.75	6.78	0.02	-5.35%	12.68%
Newtek Business Services	NEWT	Environmental	4953	-6.08	0.41	5.84	0.05	-43.93%	10.92%
Anadarko Petroleum	APC	Petroleum (Producing)	1300	-1.50	0.76	5.84	0.01	-2.67%	10.91%
Barnwell Industries	BRN	Petroleum (Producing)	1300	-0.92	0.86	5.28	0.02	1.47%	9.87%
Willis Lease Finance	WLFC	Financial Svcs. (Div.)	6100	-1.93	0.64	4.77	0.01	-8.51%	8.92%

Newfield Exploration	NFX	Natural Gas (Div.)	4929	-2.70	0.50	4.75	0.01	-15.50%	8.88%
Stone Energy	SGY	Petroleum (Producing)	1300	-3.34	0.39	4.61	0.01	-21.55%	8.62%
MER Telemgmt	MTSL	Telecom. Equipment	4811	-0.55	0.92	4.44	0.04	3.24%	8.30%
Carrizo Oil & Gas	CRZO	Petroleum (Producing)	1300	-3.78	0.55	4.37	0.08	-25.89%	8.17%
Nexen Inc.	NXY.TO	Petroleum (Producing)	1300	-1.36	0.81	4.35	0.06	-4.16%	8.13%
Amer. Shared Hosp Service	AMS	Medical Services	8000	-4.38	0.17	4.14	0.00	-31.76%	7.74%
Electro Rent Corp.	ELRC	Industrial Services	7300	-3.24	0.20	3.99	0.00	-21.74%	7.46%
Autobytel Inc	ABTL	Internet	7370	-1.99	0.61	3.87	0.02	-10.77%	7.24%
Apache Corp.	APA	Petroleum (Producing)	1300	-1.08	0.65	3.76	0.00	-2.71%	7.04%
Overseas Shipholding	OSG	Maritime	4400	-4.65	0.37	3.71	0.07	-35.02%	6.94%
Dollar Thrifty Auto.	DTG	Trucking	4200	-1.59	0.56	3.67	0.00	-7.49%	6.86%
CenturyLink Inc.	CTL	Telecom. Utility	4810	-0.33	0.85	3.55	0.00	3.57%	6.64%
eResearchTechnology	ERT	Healthcare Information	7375	-0.03	0.99	3.55	0.04	6.32%	6.64%
Krispy Kreme	KKD	Restaurant	5812	-1.12	0.82	3.48	0.07	-3.66%	6.51%
Alico Inc.	ALCO	Food Processing	2000	0.00	1.00	3.46	0.02	6.36%	6.47%

Warwick Valley Tel Co	WWVY	Telecom. Utility	4810	-6.86	0.09	3.36	0.03	-55.48%	6.28%
Richmont Mines	RIC.TO	Precious Metals	1041	-2.56	0.55	3.35	0.05	-16.84%	6.26%
Crown Castle Int'l	CCI	Wireless Networking	7380	-1.03	0.80	3.31	0.05	-3.10%	6.19%
MGM Resorts Int'l	MGM	Hotel/Gaming	7000	-1.64	0.70	3.25	0.06	-8.75%	6.08%
STMicroelectronics	STM	Semiconductor	3674	-2.76	0.20	3.19	0.00	-18.95%	5.97%
Mobile Telesystems OJSC	MBT	Telecom. Services	4890	-0.18	0.94	3.06	0.01	4.05%	5.72%
Taiwan Semic. ADR	TSM	Semiconductor	3674	-2.24	0.29	2.97	0.00	-14.68%	5.55%
Misonix Inc.	MSON	Med Supp Non-Invasive	3842	-2.68	0.41	2.95	0.03	-18.69%	5.52%
TELUS Corporation	T.TO	Telecom. Services	4890	-0.60	0.67	2.88	0.00	-0.03%	5.39%
Electronic Arts	EA	Entertainment Tech	3663	-2.12	0.25	2.88	0.00	-13.76%	5.39%
Talisman Energy	TLM	Natural Gas (Div.)	4929	-0.70	0.86	2.87	0.07	-0.98%	5.37%
Conn. Water Services	CTWS	Water Utility	4941	-1.36	0.62	2.87	0.02	-6.95%	5.37%
Dominion Resources	D	Electric Utility (East)	4911	-0.27	0.91	2.85	0.01	2.82%	5.33%
Nordic Amer. Tanker Shp.	NAT	Maritime	4400	-11.40	0.02	2.84	0.07	-97.33%	5.31%
Telefonos de Mexico ADR	TMX	Telecom. Utility	4810	-1.65	0.52	2.83	0.01	-9.66%	5.29%
TransCanada Corp.	TRP	Oil/Gas Distribution	4610	-0.99	0.81	2.78	0.09	-3.81%	5.20%
Hydromer Inc	HYDI	Chemical (Specialty)	2820	-2.60	0.42	2.78	0.04	-18.28%	5.20%
Devon Energy	DVN	Natural Gas (Div.)	4929	-1.01	0.61	2.77	0.00	-3.92%	5.18%
SBA Communications	SBAC	Wireless Networking	7380	-1.57	0.56	2.77	0.02	-9.01%	5.18%

Chesapeake Energy	CHK	Natural Gas (Div.)	4929	-0.61	0.86	2.74	0.05	-0.39%	5.12%
Parker Drilling	PKD	Oilfield Svcs/Equip.	3533	-0.65	0.78	2.72	0.01	-0.81%	5.09%
PPL Corp.	PPL	Electric Utility (East)	4911	-0.37	0.78	2.72	0.00	1.72%	5.09%
Forest Labs.	FRX	Drug	2834	-0.05	0.97	2.64	0.00	4.39%	4.94%
Sprint Nextel Corp.	S	Telecom. Services	4890	-2.51	0.03	2.64	0.00	-17.73%	4.94%
Affymetrix Inc.	AFFX	Med Supp Non-Invasive	3842	-0.11	0.98	2.63	0.07	3.91%	4.92%
Millicom Int'l Cellular	MIICF	Telecom. Services	4890	-1.42	0.68	2.63	0.06	-7.91%	4.92%
Media General 'A'	MEG	Newspaper	2710	-0.75	0.73	2.60	0.01	-1.92%	4.86%
Mediware Info Syst	MEDW	Healthcare Information	7375	-0.37	0.84	2.57	0.00	1.47%	4.81%
Gray Television Inc	GTN	Entertainment	7950	-1.00	0.75	2.55	0.05	-4.32%	4.77%
Lincare Holdings	LNCR	Medical Services	8000	-0.91	0.41	2.53	0.00	-3.51%	4.73%
Shuffle Master	SHFL	Hotel/Gaming	7000	-2.03	0.55	2.53	0.06	-13.60%	4.73%
Schnitzer Steel	SCHN	Steel	3311	-0.30	0.86	2.52	0.00	1.99%	4.71%
McGrath RentCorp	MGRC	Industrial Services	7300	-1.47	0.31	2.52	0.00	-8.57%	4.71%
Royal Gold	RGLD	Precious Metals	1041	-2.42	0.50	2.52	0.07	-17.11%	4.71%
Hickory Tech Corp	HTCO	Telecom. Services	4890	-1.53	0.37	2.50	0.00	-9.13%	4.68%
Telecom N. Zealand	NZT	Telecom. Services	4890	-1.76	0.11	2.50	0.00	-11.19%	4.68%
West Fraser Timber Co.	WFT.TO	Paper/Forest Products	2600	-0.53	0.87	2.47	0.06	-0.25%	4.62%

Forest City Enterpr.	FCE/A	Property Management	6510	-0.59	0.67	2.45	0.00	-0.81%	4.58%
Lamar Advertising	LAMR	Advertising	7310	-4.10	0.12	2.39	0.02	-32.47%	4.47%
Verizon Communic.	VZ	Telecom. Services	4890	-2.00	0.31	2.38	0.01	-13.63%	4.45%
Gen'l Communic. 'A'	GNCMA	Telecom. Services	4890	-0.57	0.59	2.36	0.00	-0.75%	4.41%
Steel Dynamics	STLD	Steel	3311	-0.59	0.81	2.36	0.03	-0.97%	4.41%
Sinclair Broadcast	SBGI	Entertainment	7950	-1.89	0.30	2.36	0.01	-12.64%	4.41%
Microchip Technology	MCHP	Semiconductor	3674	-0.12	0.85	2.35	0.00	3.28%	4.39%
Trans Lux Corp.	TNLX	Electronics	3670	-3.69	0.05	2.35	0.00	-28.82%	4.39%
Goldcorp Inc.	GG	Precious Metals	1041	-0.53	0.86	2.33	0.05	-0.43%	4.36%
Forest City Enterprises Inc	FCE/B	Property Management	6510	-0.50	0.67	2.30	0.00	-0.24%	4.30%
Symantec Corp.	SYMC	Computer Software	3579	-1.01	0.60	2.30	0.01	-4.79%	4.30%
BCE Inc.	BCE	Telecom. Utility	4810	-0.60	0.60	2.29	0.00	-1.16%	4.28%
Cabot Microelectr's	CCMP	Chemical (Specialty)	2820	-0.72	0.61	2.28	0.00	-2.27%	4.26%
Eaton Vance Corp.	EV	Financial Svcs. (Div.)	6100	-0.94	0.60	2.27	0.01	-4.30%	4.24%
Telephone & Data	TDS	Telecom. Services	4890	-1.59	0.35	2.27	0.01	-10.14%	4.24%
Vulcan Materials	VMC	Building Materials	3200	-2.47	0.39	2.26	0.05	-18.09%	4.23%
QLogic Corp.	QLGC	Semiconductor	3674	-0.26	0.89	2.22	0.01	1.75%	4.15%
SureWest Communications	SURW	Telecom. Utility	4810	-1.85	0.29	2.17	0.01	-12.67%	4.06%
Fairchild Semic.	FCS	Semiconductor	3674	-0.68	0.72	2.14	0.01	-2.11%	4.00%
CEC Entertainment	CEC	Restaurant	5812	-1.84	0.51	2.14	0.05	-12.61%	4.00%

SeaChange Int'l	SEAC	Entertainment Tech	3663	-0.36	0.91	2.13	0.08	0.68%	3.98%
Century Casinos Inc	CNTY	Hotel/Gaming	7000	-2.65	0.27	2.11	0.03	-19.93%	3.95%
Morguard Corp.	MRC.TO	Financial Svcs. (Div.)	6100	-0.29	0.86	2.09	0.01	1.29%	3.91%
Waddell & Reed Finl 'A'	WDR	Financial Svcs. (Div.)	6100	-0.63	0.79	2.09	0.03	-1.78%	3.91%
Cisco Systems	CSCO	Telecom. Equipment	4811	-0.02	0.99	2.07	0.02	3.64%	3.87%
Deluxe Corp.	DLX	Publishing	2700	-0.17	0.87	2.04	0.00	2.28%	3.81%
Ameren Corp.	AEE	Electric Util. (Central)	4912	-0.30	0.84	2.04	0.01	1.06%	3.81%
Chicago Rivet & Mach Co	CVR	Auto Parts	3716	-0.96	0.64	2.02	0.02	-4.89%	3.78%
BT Group ADR	BT	Telecom. Utility	4810	-1.03	0.57	2.02	0.01	-5.55%	3.78%
Quicksilver Res.	KWK	Natural Gas (Div.)	4929	-0.20	0.93	2.00	0.04	1.91%	3.74%
LodgeNet Interactive	LNET	Cable TV	4840	-3.62	0.15	1.99	0.04	-28.92%	3.72%
Lin TV Corp.	TVL	Entertainment	7950	-3.83	0.22	1.99	0.08	-30.78%	3.72%
Affiliated Managers	AMG	Financial Svcs. (Div.)	6100	-0.62	0.64	1.97	0.00	-1.96%	3.68%
Stillwater Mining	SWC	Precious Metals	1041	-2.88	0.34	1.97	0.08	-22.31%	3.68%
U S Lime & Minerals	USLM	Building Materials	3200	-0.91	0.54	1.93	0.01	-4.63%	3.61%
Gentex Corp.	GNTX	Auto Parts	3716	-0.15	0.86	1.92	0.00	2.24%	3.59%
Vornado R'lty Trust	VNO	R.E.I.T.	6720	-2.97	0.21	1.92	0.04	-23.17%	3.59%
Suncor Energy	SU.TO	Petroleum (Integrated)	2900	-1.83	0.43	1.90	0.04	-12.98%	3.55%
El Paso Electric	EE	Electric Utility (West)	4913	-0.79	0.50	1.88	0.00	-3.62%	3.52%

United Rentals	URI	Machinery	3500	-1.40	0.29	1.88	0.00	-9.12%	3.52%
Emmis Communications	EMMS	Entertainment	7950	-3.16	0.02	1.85	0.00	-24.98%	3.46%
Methanex Corp.	MEOH	Chemical (Specialty)	2820	-1.25	0.63	1.84	0.07	-7.82%	3.44%
Int'l Speedway 'A'	ISCA	Recreation	7900	-0.87	0.64	1.83	0.02	-4.41%	3.42%
Comcast Corp.	CMCSK	Cable TV	4840	-1.14	0.57	1.82	0.03	-6.89%	3.40%
U.S. Cellular	USM	Telecom. Services	4890	-1.82	0.27	1.82	0.01	-13.04%	3.40%
Point.360	PTSX	Entertainment	7950	-2.57	0.03	1.82	0.00	-19.75%	3.40%
Superior Inds. Int'l	SUP	Auto Parts	3716	-0.73	0.73	1.81	0.04	-3.20%	3.38%
Hardinge Inc.	HDNG	Machinery	3500	-0.37	0.84	1.80	0.03	0.04%	3.37%
Hutchinson Techn.	HTCH	Precision Instrument	3800	-3.81	0.08	1.80	0.03	-31.01%	3.37%
Brown & Brown	BRO	Financial Svcs. (Div.)	6100	-0.43	0.87	1.79	0.09	-0.59%	3.35%
SCANA Corp.	SCG	Electric Utility (East)	4911	-0.15	0.92	1.79	0.01	1.98%	3.35%
FirstEnergy Corp.	FE	Electric Utility (East)	4911	-0.82	0.61	1.79	0.01	-4.11%	3.35%
Waste Connections	WCN	Environmental	4953	-0.53	0.56	1.77	0.00	-1.46%	3.31%
Gannett Co.	GCI	Newspaper	2710	-0.36	0.73	1.75	0.00	-0.01%	3.27%
AES Corp.	AES	Power	4900	-0.56	0.63	1.75	0.00	-1.79%	3.27%
Casella Waste Sys.	CWST	Environmental	4953	-0.86	0.50	1.75	0.00	-4.48%	3.27%
Landauer Inc.	LDR	Environmental	4953	-0.42	0.84	1.73	0.04	-0.55%	3.24%
Starwood Hotels	HOT	Hotel/Gaming	7000	-0.66	0.79	1.72	0.08	-2.72%	3.22%
ONEOK Inc.	OKE	Oil/Gas Distribution	4610	-0.10	0.97	1.71	0.07	2.30%	3.20%

JetBlue Airways	JBLU	Air Transport	4510	-0.47	0.77	1.70	0.02	-1.11%	3.18%
International Speedway Corp	ISCB	Recreation	7900	-0.80	0.67	1.70	0.03	-4.04%	3.18%
Amer. Axle	AXL	Auto Parts	3716	-0.19	0.91	1.69	0.02	1.42%	3.16%
Exco Technologies Ltd.	XTC.TO	Machinery	3500	-0.60	0.77	1.69	0.04	-2.20%	3.16%
Sempra Energy	SRE	Electric Utility (West)	4913	-0.02	0.99	1.69	0.02	2.91%	3.16%
Southwest Gas	SWX	Natural Gas Utility	4920	-0.02	0.98	1.69	0.00	2.96%	3.16%
Petroleo Brasileiro ADR	PBR	Petroleum (Integrated)	2900	-0.71	0.62	1.69	0.01	-3.28%	3.16%
P.A.M. Transport Svcs	PTSI	Trucking	4200	-1.77	0.15	1.69	0.00	-12.84%	3.16%
Cabot Corp.	CBT	Chemical (Diversified)	2813	-0.91	0.54	1.66	0.01	-5.16%	3.10%
Speedway Motorsports	TRK	Recreation	7900	-0.32	0.86	1.65	0.04	0.16%	3.09%
Schawk Inc.	SGK	Industrial Services	7300	-0.18	0.89	1.64	0.01	1.36%	3.07%
Federated Investors	FII	Financial Svcs. (Div.)	6100	-0.13	0.96	1.64	0.09	1.89%	3.07%
New York Times	NYT	Newspaper	2710	-0.59	0.41	1.64	0.00	-2.28%	3.07%
Southern Co.	SO	Electric Utility (East)	4911	-0.78	0.42	1.61	0.00	-4.09%	3.01%
Perceptron Inc.	PRCP	Precision Instrument	3800	-0.60	0.75	1.60	0.04	-2.40%	2.99%
FEI Company	FEIC	Precision Instrument	3800	-0.55	0.79	1.58	0.06	-2.07%	2.95%
Ryder System	R	Trucking	4200	-0.91	0.42	1.58	0.00	-5.27%	2.95%
Block (H&R)	HRB	Financial Svcs. (Div.)	6100	-0.37	0.87	1.57	0.07	-0.39%	2.94%

Xcel Energy Inc.	XEL	Electric Utility (West)	4913	-0.13	0.91	1.57	0.00	1.77%	2.94%
Analogic Corp.	ALOG	Precision Instrument	3800	-0.52	0.83	1.57	0.09	-1.78%	2.93%
Semtech Corp.	SMTC	Semiconductor	3674	-0.02	0.99	1.56	0.06	2.68%	2.92%
Fortis Inc.	FTS.TO	Electric Utility (East)	4911	-0.51	0.62	1.54	0.00	-1.74%	2.88%
Hawaiian Elec.	HE	Electric Utility (West)	4913	-0.87	0.34	1.54	0.00	-4.98%	2.88%
Alliant Energy	LNT	Electric Util. (Central)	4912	-0.42	0.70	1.53	0.00	-0.98%	2.86%
Heartland Express	HTLD	Trucking	4200	-0.03	0.95	1.53	0.00	2.55%	2.86%
Vail Resorts	MTN	Hotel/Gaming	7000	-0.56	0.56	1.52	0.00	-2.27%	2.84%
Simpson Manufacturing	SSD	Building Materials	3200	0.00	1.00	1.51	0.02	2.82%	2.82%
Coinstar Inc.	CSTR	Industrial Services	7300	-2.27	0.14	1.51	0.02	-17.61%	2.82%
FUJIFILM Hldgs. ADR	FUJIY	Foreign Electronics	9975	-0.39	0.76	1.50	0.01	-0.70%	2.81%
Canon Inc. ADR	CAJ	Foreign Electronics	9975	-0.14	0.87	1.50	0.00	1.55%	2.81%
Providence & Worcester R R	PWX	Railroad	4002	-1.59	0.35	1.50	0.03	-11.57%	2.81%
Amkor Technology	AMKR	Semiconductor Equip	3680	-0.29	0.89	1.50	0.08	0.15%	2.80%
Rayonier Inc.	RYN	Paper/Forest Products	2600	-0.27	0.80	1.49	0.00	0.33%	2.79%
Republic Services	RSG	Environmental	4953	-0.03	0.98	1.49	0.00	2.50%	2.79%
Stoneridge Inc	SRI	Electrical Equipment	3600	-0.84	0.41	1.49	0.00	-4.83%	2.79%
Garmin Ltd.	GRMN	Electrical Equipment	3600	-0.87	0.53	1.48	0.01	-5.07%	2.77%
Cen. Vermont Pub. Serv.	CV	Electric Utility (East)	4911	-0.90	0.53	1.48	0.02	-5.37%	2.77%
Equity One Inc	EQY	Retail Store	5300	-3.74	0.06	1.48	0.04	-30.89%	2.77%

Tecumseh Products 'A'	TECUA	Machinery	3500	-1.34	0.38	1.47	0.02	-9.34%	2.75%
Mac-Gray Corp	TUC	Industrial Services	7300	-0.81	0.38	1.45	0.00	-4.60%	2.71%
Cytec Inds.	CYT	Chemical (Diversified)	2813	-0.33	0.71	1.44	0.00	-0.33%	2.69%
Ameristar Casinos Inc.	ASCA	Hotel/Gaming	7000	-0.44	0.70	1.43	0.01	-1.28%	2.68%
Can. Pacific Railway	CP	Railroad	4002	-0.33	0.69	1.43	0.00	-0.30%	2.67%
Zebra Techn. 'A'	ZBRA	Wireless Networking	7380	-0.45	0.57	1.42	0.00	-1.46%	2.66%
SkyWest	SKYW	Air Transport	4510	-0.72	0.48	1.42	0.00	-3.87%	2.66%
Monarch Casino & Resort	MCRI	Hotel/Gaming	7000	-0.99	0.51	1.42	0.03	-6.29%	2.66%
Covenant Transport Inc	CVTI	Trucking	4200	-0.34	0.76	1.40	0.01	-0.44%	2.62%
Abercrombie & Fitch	ANF	Retail (Softlines)	5600	-1.10	0.38	1.40	0.01	-7.28%	2.62%
Scientific Games	SGMS	Hotel/Gaming	7000	-2.09	0.02	1.39	0.00	-16.25%	2.60%
Waste Management	WM	Environmental	4953	-0.33	0.75	1.38	0.00	-0.39%	2.58%
ResMed Inc.	RMD	Med Supp Non-Invasive	3842	-0.18	0.87	1.38	0.01	0.97%	2.58%
Cablevision Sys. 'A'	CVC	Cable TV	4840	-0.42	0.77	1.38	0.03	-1.19%	2.58%
DTE Energy	DTE	Electric Util. (Central)	4912	-0.49	0.77	1.38	0.04	-1.89%	2.58%
Stewart Enterpr. 'A'	STEI	Funeral Services	7261	-1.00	0.46	1.37	0.02	-6.48%	2.56%
Berry Petroleum `A'	BRY	Petroleum (Producing)	1300	-0.61	0.73	1.36	0.06	-2.93%	2.54%

Sonic Corp.	SONC	Restaurant	5812	-0.43	0.68	1.35	0.01	-1.36%	2.52%
MTR Gaming Group Inc	MNTG	Hotel/Gaming	7000	-0.43	0.61	1.35	0.00	-1.38%	2.52%
Graphic Packaging Hldg Co	GPK	Packaging & Container	2640	-0.42	0.70	1.34	0.01	-1.35%	2.51%
Alcoa Inc.	AA	Metals & Mining (Div.)	1000	-0.75	0.71	1.34	0.09	-4.30%	2.51%
Key Technology	KTEC	Machinery	3500	-0.88	0.57	1.34	0.04	-5.42%	2.51%
Glacier Water Svcs. Inc	GWSV	Beverage	2080	-1.76	0.22	1.34	0.02	-13.35%	2.51%
Marcus Corp.	MCS	Hotel/Gaming	7000	-1.05	0.13	1.33	0.00	-7.00%	2.49%
Arbitron Inc.	ARB	Information Services	8900	-0.68	0.69	1.33	0.06	-3.70%	2.48%
Canterbury Pk Hldg Corp	CPHC	Hotel/Gaming	7000	-1.90	0.22	1.32	0.03	-14.61%	2.47%
MGE Energy	MGEE	Electric Util. (Central)	4912	-0.06	0.96	1.30	0.01	1.91%	2.43%
Mobile Mini Inc	MINI	Industrial Services	7300	0.00	1.00	1.30	0.04	2.44%	2.43%
Patriot Transportation Holdin	PATR	Diversified Co.	9913	-0.57	0.72	1.30	0.05	-2.74%	2.43%
Boyd Gaming	BYD	Hotel/Gaming	7000	-0.03	0.99	1.29	0.06	2.12%	2.41%
Werner Enterprises	WERN	Trucking	4200	-0.51	0.27	1.28	0.00	-2.19%	2.39%
Health Mgmt. Assoc.	HMA	Medical Services	8000	-0.74	0.54	1.28	0.02	-4.29%	2.39%
Conmed Corp.	CNMD	Med Supp Invasive	8060	-0.91	0.28	1.28	0.00	-5.81%	2.39%
Empire Dist. Elec.	EDE	Electric Util. (Central)	4912	-1.26	0.42	1.28	0.04	-9.02%	2.39%
Air Products & Chem.	APD	Chemical	2813	-0.35	0.71	1.27	0.00	-0.82%	2.37%

		(Diversified)							
QIAGEN N.V.	QGEN	Biotechnology	2830	-0.18	0.90	1.25	0.03	0.71%	2.34%
Vishay Intertechnology	VSH	Electronics	3670	-0.53	0.76	1.25	0.07	-2.47%	2.34%
Ford Motor	F	Automotive	3710	-0.63	0.72	1.25	0.07	-3.31%	2.34%
Arrhythmia Res Tech	HRT	Med Supp Non-Invasive	3842	-1.94	0.15	1.24	0.02	-15.20%	2.33%
Ruby Tuesday	RT	Restaurant	5812	-0.87	0.46	1.24	0.02	-5.54%	2.32%
Thomson Reuters	TRI.TO	Information Services	8900	-0.97	0.28	1.23	0.00	-6.45%	2.30%
Stratasys Inc	SSYS	Computers/Peripherals	3573	-0.19	0.90	1.22	0.05	0.59%	2.28%
Molex Inc.	MOLX	Electronics	3670	-0.58	0.69	1.22	0.04	-2.99%	2.28%
Columbia Sportswear	COLM	Apparel	2300	-0.91	0.30	1.21	0.00	-5.93%	2.26%
Watson Pharmac.	WPI	Drug	2834	-1.06	0.55	1.21	0.08	-7.33%	2.26%
Cascade Corp.	CASC	Machinery	3500	-0.12	0.94	1.19	0.08	1.10%	2.23%
Libbey Inc.	LBY	Household Products	2840	-0.68	0.62	1.19	0.04	-3.90%	2.23%
Manhattan Assoc.	MANH	IT Services	7379	-0.29	0.84	1.18	0.05	-0.47%	2.21%
Toyota Motor ADR	TM	Automotive	3710	-0.43	0.55	1.18	0.00	-1.73%	2.21%
Sealed Air	SEE	Packaging & Container	2640	-0.08	0.93	1.17	0.01	1.46%	2.19%
Rogers Corp.	ROG	Electronics	3670	-0.47	0.68	1.17	0.02	-2.07%	2.19%

Bowl America CI 'A'	BWL/A	Recreation	7900	-1.19	0.14	1.17	0.00	-8.51%	2.19%
Buckeye Technologies	BKI	Paper/Forest Products	2600	-0.06	0.97	1.16	0.05	1.64%	2.17%
MDU Resources	MDU	Natural Gas (Div.)	4929	-0.38	0.59	1.15	0.00	-1.34%	2.15%
Marten Transport Ltd.	MRTN	Trucking	4200	-0.42	0.56	1.15	0.00	-1.63%	2.15%
Wausau Paper	WPP	Paper/Forest Products	2600	-0.59	0.70	1.15	0.06	-3.23%	2.15%
Methode Elec.	MEI	Electronics	3670	-0.71	0.54	1.15	0.02	-4.27%	2.15%
Amer. Woodmark	AMWD	Building Materials	3200	-1.76	0.20	1.14	0.03	-13.76%	2.14%
Daktronics Inc.	DAKT	Entertainment Tech	3663	-0.38	0.80	1.14	0.06	-1.33%	2.13%
Carmike Cinemas Inc	CKEC	Recreation	7900	-1.33	0.28	1.14	0.02	-9.91%	2.13%
Albany Int'l 'A'	AIN	Machinery	3500	-0.57	0.55	1.13	0.01	-3.03%	2.11%
Exactech Inc	EXAC	Med Supp Invasive	8060	-0.77	0.17	1.13	0.00	-4.86%	2.11%
BorgWarner	BWA	Auto Parts	3716	-0.14	0.82	1.12	0.00	0.80%	2.09%
Itron Inc.	ITRI	Wireless Networking	7380	-0.05	0.97	1.12	0.05	1.63%	2.09%
Panera Bread Co.	PNRA	Restaurant	5812	-0.71	0.66	1.12	0.08	-4.28%	2.09%
Masco Corp.	MAS	Building Materials	3200	-0.72	0.21	1.12	0.00	-4.43%	2.09%
USA Truck	USAK	Trucking	4200	-0.97	0.14	1.12	0.00	-6.62%	2.09%
Kraft Foods	KFT	Food Processing	2000	-0.08	0.94	1.11	0.02	1.33%	2.08%
Capital Senior Living	CSU	Medical Services	8000	-1.47	0.27	1.10	0.04	-11.23%	2.06%
Hooper Holmes	HH	Healthcare Information	7375	-1.04	0.19	1.09	0.00	-7.29%	2.04%

West Marine	WMAR	Retail (Hardlines)	5999	-0.56	0.56	1.08	0.01	-3.04%	2.02%
Minerals Techn.	MTX	Chemical (Specialty)	2820	-0.84	0.26	1.08	0.00	-5.58%	2.02%
bebe stores	BEBE	Retail (Softlines)	5600	-1.41	0.34	1.08	0.06	-10.70%	2.02%
Zale Corp.	ZLC	Retail (Hardlines)	5999	-1.54	0.18	1.08	0.02	-11.82%	2.02%
Delta Natural Gas	DGAS	Natural Gas Utility	4920	-0.10	0.94	1.07	0.06	1.08%	2.00%
Tootsie Roll Ind.	TR	Food Processing	2000	-0.77	0.54	1.07	0.04	-4.94%	2.00%
Decorator Inds Inc.	DINIQ	Furn/Home Furnishings	2500	-2.78	0.08	1.07	0.06	-23.01%	2.00%
Ecolab Inc.	ECL	Chemical (Specialty)	2820	-0.08	0.88	1.06	0.00	1.20%	1.98%
Rimage Corp.	RIMG	Computers/Peripherals	3573	-0.06	0.96	1.06	0.04	1.38%	1.98%
AptarGroup	ATR	Packaging & Container	2640	-0.29	0.62	1.05	0.00	-0.70%	1.97%
Merit Medical Systems	MMSI	Med Supp Non-Invasive	3842	-0.34	0.80	1.05	0.05	-1.14%	1.96%
Total System Svcs.	TSS	Financial Svcs. (Div.)	6100	-0.37	0.70	1.05	0.01	-1.39%	1.96%
Furniture Brands	FBN	Furn/Home Furnishings	2500	-1.34	0.40	1.05	0.08	-10.12%	1.96%
Praxair Inc.	PX	Chemical (Specialty)	2820	-0.07	0.93	1.04	0.01	1.27%	1.94%
Kenneth Cole 'A'	KCP	Shoe	3140	-0.76	0.28	1.04	0.00	-4.93%	1.94%

Blyth Inc.	BTH	Household Products	2840	-0.64	0.29	1.03	0.00	-3.82%	1.93%
Interpublic Group	IPG	Advertising	7310	-0.37	0.77	1.02	0.05	-1.41%	1.91%
Pitney Bowes	PBI	Office Equip/Supplies	3570	-0.75	0.17	1.02	0.00	-4.90%	1.91%
Carriage Services Inc	CSV	Funeral Services	7261	-0.99	0.37	1.02	0.03	-6.98%	1.91%
DSP Group	DSPG	Wireless Networking	7380	-1.52	0.23	1.02	0.04	-11.80%	1.91%
Forward Air	FWRD	Trucking	4200	-0.18	0.89	1.01	0.06	0.23%	1.89%
Luxottica Group ADR	LUX	Retail (Hardlines)	5999	-0.73	0.40	1.01	0.01	-4.71%	1.89%
Du Pont	DD	Chemical (Basic)	2810	-0.26	0.80	1.00	0.02	-0.50%	1.87%
Corporate Executive	EXBD	Information Services	8900	-0.12	0.93	1.00	0.07	0.80%	1.87%
Cost Plus Inc.	CPWM	Retail (Hardlines)	5999	-0.66	0.59	0.99	0.05	-4.08%	1.85%
Nokia Corp. ADR	NOK	Telecom. Equipment	4811	-0.85	0.42	0.99	0.03	-5.84%	1.85%
Eastman Kodak	EK	Precision Instrument	3800	-1.97	0.07	0.99	0.02	-15.88%	1.85%
Dixie Group	DXYN	Furn/Home Furnishings	2500	-1.05	0.18	0.97	0.01	-7.63%	1.81%
Packaging Corp.	PKG	Packaging & Container	2640	-0.39	0.70	0.96	0.03	-1.73%	1.80%
Finning International Inc.	FTT.TO	Machinery	3500	-0.94	0.27	0.96	0.01	-6.72%	1.80%
Sypris Solutions	SYPR	Electronics	3670	-1.09	0.07	0.96	0.00	-8.08%	1.80%
Caterpillar Inc.	CAT	Heavy Truck & Equip	3713	-0.09	0.92	0.95	0.02	0.93%	1.78%
Wiley (John) & Sons	JW/A	Publishing	2700	-0.01	0.99	0.95	0.01	1.69%	1.78%

Birner Dental Management Svcs	BDMS	Medical Services	8000	-0.58	0.43	0.95	0.01	-3.48%	1.78%
Hot Topic Inc.	HOTT	Retail (Softlines)	5600	-1.55	0.18	0.95	0.03	-12.14%	1.78%
United Parcel Serv.	UPS	Air Transport	4510	0.00	1.00	0.94	0.03	1.73%	1.76%
P&F Industries	PFIN	Metal Fabricating	3400	-0.41	0.78	0.93	0.09	-1.94%	1.74%
Royal Caribbean Cruises	RCL	Recreation	7900	-1.57	0.05	0.93	0.01	-12.36%	1.74%
Cache Inc.	CACH	Retail (Softlines)	5600	-1.44	0.17	0.91	0.03	-11.29%	1.70%
PepsiCo Inc.	PEP	Beverage	2080	-0.13	0.92	0.90	0.08	0.54%	1.68%
Mendocino Brewing Inc	MENB	Beverage	2080	-0.82	0.32	0.90	0.01	-5.70%	1.68%
Courier Corp.	CRRC	Publishing	2700	-1.12	0.26	0.90	0.03	-8.43%	1.68%
Cross (A.T.)	ATX	Office Equip/Supplies	3570	-0.18	0.85	0.89	0.03	0.00%	1.66%
Ferro Corp.	FOE	Chemical (Specialty)	2820	-0.03	0.96	0.89	0.01	1.39%	1.66%
Mohawk Inds.	MHK	Furn/Home Furnishings	2500	-0.36	0.56	0.89	0.00	-1.59%	1.66%
Churchill Downs	CHDN	Hotel/Gaming	7000	-0.71	0.48	0.89	0.03	-4.76%	1.66%
Iron Mountain	IRM	Industrial Services	7300	-0.92	0.28	0.89	0.01	-6.59%	1.66%
Cintas Corp.	CTAS	Industrial Services	7300	-0.37	0.54	0.88	0.00	-1.72%	1.65%
Six Flags Entertainment Corp	SIX	Recreation	7900	-3.07	0.05	0.88	0.09	-25.99%	1.65%
Owens-Illinois	OI	Packaging & Container	2640	-0.03	0.97	0.87	0.03	1.31%	1.63%

G&K Services `A'	GKSR	Industrial Services	7300	-0.51	0.39	0.87	0.00	-2.99%	1.63%
Martin Marietta	MLM	Building Materials	3200	-0.73	0.36	0.87	0.01	-4.96%	1.63%
SRI/Surgical Express Inc	STRC	Med Supp Non-Invasive	3842	-1.66	0.12	0.87	0.03	-13.31%	1.63%
Repsol-YPF ADR	REPYY	Petroleum (Integrated)	2900	-0.29	0.56	0.86	0.00	-1.00%	1.61%
Mattel Inc.	MAT	Recreation	7900	-0.04	0.96	0.86	0.02	1.20%	1.61%
Franklin Electric	FELE	Electrical Equipment	3600	-0.34	0.74	0.86	0.05	-1.51%	1.61%
Dycom Inds.	DY	Telecom. Services	4890	-0.72	0.31	0.86	0.01	-4.87%	1.61%
Jones Group (The)	JNY	Apparel	2300	-0.26	0.81	0.85	0.05	-0.81%	1.59%
Convergys Corp.	CVG	Industrial Services	7300	-1.11	0.27	0.85	0.03	-8.39%	1.59%
Eaton Corp.	ETN	Auto Parts	3716	-0.17	0.80	0.84	0.01	0.03%	1.57%
Salem Communications Corp	SALM	Entertainment	7950	-0.27	0.78	0.84	0.04	-0.91%	1.57%
Pep Boys	PBY	Retail Automotive	5531	-0.34	0.69	0.84	0.02	-1.49%	1.57%
Computer Sciences	CSC	IT Services	7379	-0.43	0.51	0.84	0.01	-2.35%	1.57%
Magna Int'l 'A'	MGA	Auto Parts	3716	-0.51	0.55	0.84	0.02	-3.08%	1.57%
Donnelley (R.R) & Sons	RRD	Publishing	2700	-0.31	0.62	0.83	0.01	-1.26%	1.55%
Alexander & Baldwin	ALEX	Maritime	4400	-0.77	0.31	0.83	0.01	-5.39%	1.55%
Beasley Broadcast Group Inc	BBGI	Entertainment	7950	-0.25	0.77	0.82	0.02	-0.72%	1.53%
Brinker Int'l	EAT	Restaurant	5812	-0.31	0.33	0.82	0.00	-1.24%	1.53%

Superior Uniform Group	SGC	Apparel	2300	-0.33	0.60	0.82	0.01	-1.49%	1.53%
Coca-Cola Bottling	COKE	Beverage	2080	-0.33	0.54	0.82	0.00	-1.49%	1.53%
Delta Galil Industries Ltd	DELTY	Apparel	2300	-0.14	0.88	0.81	0.04	0.25%	1.51%
Consolidated Graphics	CGX	Publishing	2700	-0.29	0.57	0.81	0.00	-1.10%	1.51%
Pepco Holdings	POM	Electric Utility (East)	4911	-0.30	0.64	0.81	0.01	-1.17%	1.51%
Layne Christensen	LAYN	Engineering & Const	1629	-0.01	0.98	0.81	0.00	1.39%	1.51%
Southwest Airlines	LUV	Air Transport	4510	-0.43	0.66	0.81	0.05	-2.41%	1.51%
CSS Industries	CSS	Paper/Forest Products	2600	-0.43	0.21	0.81	0.00	-2.42%	1.51%
West Pharmac. Svcs.	WST	Med Supp Non-Invasive	3842	-0.51	0.38	0.81	0.00	-3.08%	1.51%
Multi-Color Corp	LABL	Industrial Services	7300	-0.20	0.69	0.80	0.00	-0.36%	1.50%
Harte-Hanks	HHS	Advertising	7310	-0.36	0.64	0.80	0.02	-1.77%	1.50%
Bemis Co.	BMS	Packaging & Container	2640	-0.39	0.65	0.80	0.03	-2.07%	1.50%
Amdocs Ltd.	DOX	IT Services	7379	-0.67	0.54	0.80	0.07	-4.57%	1.50%
Ark Restaurants Corp.	ARKR	Restaurant	5812	-0.15	0.86	0.80	0.03	0.09%	1.49%
UniFirst Corp.	UNF	Industrial Services	7300	-0.02	0.98	0.79	0.03	1.29%	1.48%
Abbott Labs.	ABT	Drug	2834	-0.37	0.64	0.79	0.02	-1.85%	1.48%
ATS Automation Tooling Systems	ATA.TO	Machinery	3500	-0.87	0.44	0.79	0.08	-6.41%	1.48%

RadioShack Corp.	RSH	Retail (Hardlines)	5999	-0.12	0.90	0.78	0.04	0.39%	1.46%
Corn Products Int'l	CPO	Food Processing	2000	-0.32	0.73	0.78	0.04	-1.43%	1.46%
Regis Corp.	RGS	Toiletries/Cosmetics	2844	-0.45	0.62	0.78	0.04	-2.59%	1.46%
Eastern Company	EML	Metal Fabricating	3400	-0.46	0.58	0.78	0.03	-2.66%	1.46%
Harsco Corp.	HSC	Industrial Services	7300	-0.95	0.22	0.78	0.02	-7.13%	1.46%
O'Charley's Inc.	CHUX	Restaurant	5812	-1.19	0.21	0.78	0.04	-9.32%	1.46%
Arkansas Best	ABFS	Trucking	4200	-1.10	0.37	0.77	0.10	-8.45%	1.45%
Sensient Techn.	SXT	Food Processing	2000	-0.36	0.61	0.77	0.01	-1.80%	1.44%
J&J Snack Foods	JJSF	Food Processing	2000	-0.13	0.88	0.76	0.03	0.24%	1.42%
Cheesecake Factory	CAKE	Restaurant	5812	-0.26	0.62	0.76	0.00	-0.92%	1.42%
U.S. Physical Therapy	USPH	Medical Services	8000	-0.05	0.96	0.76	0.05	0.94%	1.42%
Cantel Medical Corp.	CMN	Med Supp Non-Invasive	3842	-0.07	0.95	0.75	0.06	0.80%	1.40%
Kimberly-Clark	KMB	Household Products	2840	-0.28	0.71	0.75	0.02	-1.08%	1.40%
Hunt (J.B.)	JBHT	Trucking	4200	-0.03	0.95	0.75	0.00	1.13%	1.40%
Haverty Furniture Companies In	HVT/A	Retail Store	5300	-0.55	0.18	0.75	0.00	-3.61%	1.40%
Georgia Gulf	GGC	Chemical (Basic)	2810	-0.70	0.44	0.75	0.04	-4.93%	1.40%
Sonoco Products	SON	Packaging & Container	2640	-0.33	0.42	0.74	0.00	-1.63%	1.38%

Gaylord Entertainm.	GET	Hotel/Gaming	7000	-0.38	0.70	0.74	0.06	-2.03%	1.38%
Diebold Inc.	DBD	Office Equip/Supplies	3570	-0.77	0.27	0.74	0.01	-5.57%	1.38%
Arctic Cat Inc	ACAT	Recreation	7900	-0.45	0.61	0.73	0.04	-2.70%	1.37%
Curtiss-Wright	CW	Machinery	3500	-0.32	0.32	0.73	0.00	-1.54%	1.37%
Myers Inds.	MYE	Diversified Co.	9913	-0.70	0.47	0.73	0.06	-4.93%	1.37%
Worthington Inds.	WOR	Steel	3311	-0.27	0.78	0.72	0.06	-1.09%	1.35%
Dow Chemical	DOW	Chemical (Basic)	2810	-0.02	0.98	0.72	0.02	1.18%	1.35%
Green Mtn. Coffee	GMCR	Retail/Wholesale Food	5400	0.00	1.00	0.72	0.05	1.36%	1.35%
FedEx Corp.	FDX	Air Transport	4510	-0.32	0.32	0.72	0.00	-1.59%	1.35%
Modine Mfg.	MOD	Auto Parts	3716	-0.41	0.52	0.72	0.01	-2.37%	1.35%
Old Dominion Freight	ODFL	Trucking	4200	-0.18	0.82	0.71	0.03	-0.26%	1.33%
Quiksilver Inc.	ZQK	Retail (Softlines)	5600	-0.06	0.95	0.71	0.05	0.80%	1.33%
Weyco Group	WEYS	Shoe	3140	-0.05	0.95	0.71	0.02	0.86%	1.33%
Trans World Entertain	TWMC	Retail (Hardlines)	5999	-0.88	0.12	0.71	0.01	-6.62%	1.33%
Otter Tail Corp.	OTTR	Electric Util. (Central)	4912	-0.91	0.11	0.71	0.00	-6.83%	1.33%
Haemonetics Corp.	HAE	Med Supp Non-Invasive	3842	-0.02	0.97	0.70	0.01	1.08%	1.31%
Tredegar Corp.	TG	Chemical (Specialty)	2820	-0.36	0.71	0.70	0.07	-1.97%	1.31%
Red Robin Gourmet	RRGB	Restaurant	5812	-0.83	0.10	0.70	0.00	-6.14%	1.31%

AMCOL Int'l	ACO	Metals & Mining (Div.)	1000	-0.02	0.97	0.69	0.00	1.14%	1.29%
DST Systems	DST	IT Services	7379	-0.45	0.45	0.69	0.01	-2.81%	1.29%
Briggs & Stratton	BGG	Machinery	3500	-0.48	0.63	0.69	0.08	-3.04%	1.29%
Logitech Int'l	LOGI	Computers/Peripherals	3573	-0.69	0.41	0.69	0.04	-4.90%	1.29%
Honda Motor ADR	HMC	Automotive	3710	-0.16	0.85	0.68	0.06	-0.20%	1.27%
Universal Health Sv. `B'	UHS	Medical Services	8000	-0.04	0.94	0.68	0.01	0.92%	1.27%
P.F. Chang's	PFCB	Restaurant	5812	-0.46	0.39	0.68	0.01	-2.84%	1.27%
Royal Dutch Shell 'A'	RDS/A	Petroleum (Integrated)	2900	-0.48	0.32	0.68	0.00	-3.03%	1.27%
Linamar Machine Limited	LNR.TO	Machinery	3500	-0.64	0.31	0.68	0.01	-4.47%	1.27%
Bob Evans Farms	BOBE	Restaurant	5812	-0.45	0.58	0.67	0.04	-2.77%	1.25%
Gibraltar Inds.	ROCK	Steel	3311	-0.53	0.48	0.67	0.03	-3.56%	1.25%
Sunlink Health Sys	SSY	Medical Services	8000	-0.77	0.16	0.67	0.01	-5.75%	1.25%
Boeing	BA	Aerospace/Defense	3720	-0.19	0.84	0.66	0.08	-0.54%	1.23%
Avery Dennison	AVY	Chemical (Specialty)	2820	-0.48	0.24	0.66	0.00	-3.07%	1.23%
Carnival Corp.	CCL	Recreation	7900	-1.88	0.01	0.66	0.01	-15.71%	1.23%
Lowe's Cos.	LOW	Retail Building Supply	5211	-0.06	0.88	0.65	0.00	0.65%	1.22%

Watts Water Techn.	WTS	Machinery	3500	-0.20	0.47	0.64	0.00	-0.57%	1.20%
WGL Holdings Inc.	WGL	Natural Gas Utility	4920	-0.27	0.65	0.64	0.02	-1.26%	1.20%
Mueller Inds.	MLI	Metal Fabricating	3400	-0.52	0.50	0.64	0.04	-3.46%	1.20%
Spartech Corp	SEH	Chemical (Diversified)	2813	-0.96	0.18	0.64	0.02	-7.49%	1.20%
Mocon Inc.	MOCO	Precision Instrument	3800	-0.16	0.85	0.63	0.06	-0.26%	1.18%
Big 5 Sporting Goods	BGFV	Retail (Hardlines)	5999	-0.26	0.56	0.63	0.00	-1.18%	1.18%
Leggett & Platt	LEG	Furn/Home Furnishings	2500	-0.08	0.88	0.62	0.01	0.40%	1.16%
Foot Locker	FL	Retail (Softlines)	5600	-0.19	0.72	0.62	0.01	-0.54%	1.16%
CTS Corp.	CTS	Electronics	3670	-0.35	0.29	0.62	0.00	-2.00%	1.16%
Burke Mills Inc	BMLS	Diversified Co.	9913	-1.75	0.07	0.61	0.07	-14.65%	1.14%
TSR INC	TSRI	IT Services	7379	-0.47	0.09	0.60	0.00	-3.10%	1.12%
Charming Shoppes	CHRS	Retail (Softlines)	5600	-0.60	0.43	0.60	0.05	-4.25%	1.12%
Tufco Technologies	TFCO	Industrial Services	7300	-0.78	0.40	0.60	0.09	-5.89%	1.12%
Marriott Int'l	MAR	Hotel/Gaming	7000	-0.11	0.91	0.59	0.09	0.14%	1.10%
Family Dollar Stores	FDO	Retail Store	5300	-0.02	0.96	0.59	0.00	0.93%	1.10%
Griffon Corp.	GFF	Diversified Co.	9913	-0.50	0.25	0.59	0.00	-3.40%	1.10%
Imation Corp.	IMN	Computers/Peripherals	3573	-0.91	0.15	0.59	0.02	-7.06%	1.10%

PACCAR Inc.	PCAR	Heavy Truck & Equip	3713	-0.06	0.94	0.58	0.08	0.50%	1.08%
Moog Inc. 'A'	MOG/A	Aerospace/Defense	3720	-0.20	0.66	0.58	0.01	-0.68%	1.08%
Men's Wearhouse	MW	Retail (Softlines)	5600	-0.20	0.81	0.58	0.08	-0.71%	1.08%
CACI Int'l	CACI	IT Services	7379	0.00	0.99	0.57	0.00	1.09%	1.07%
Haverty Furniture	HVT	Retail (Hardlines)	5999	-0.57	0.16	0.57	0.00	-4.05%	1.07%
Perry Ellis Int'l	PERY	Apparel	2300	-0.13	0.87	0.56	0.07	-0.12%	1.05%
Lawson Products	LAWS	Metal Fabricating	3400	-0.15	0.84	0.56	0.06	-0.30%	1.05%
1-800-FLOWERS.COM	FLWS	Internet	7370	-0.15	0.78	0.56	0.02	-0.35%	1.05%
Pall Corp.	PLL	Chemical (Diversified)	2813	-0.04	0.93	0.56	0.02	0.64%	1.05%
Alliant Techsystems	ATK	Aerospace/Defense	3720	-0.03	0.96	0.56	0.04	0.75%	1.05%
Johnson Controls	JCI	Auto Parts	3716	-0.16	0.78	0.55	0.03	-0.44%	1.03%
Whirlpool Corp.	WHR	Diversified Co.	9913	-0.29	0.54	0.55	0.01	-1.61%	1.03%
Invacare Corp.	IVC	Med Supp Non-Invasive	3842	-0.41	0.39	0.55	0.01	-2.71%	1.03%
Barnes & Noble	BKS	Retail (Hardlines)	5999	-0.75	0.11	0.55	0.01	-5.71%	1.03%
Whole Foods Market	WFM	Retail/Wholesale Food	5400	-0.12	0.78	0.54	0.01	-0.10%	1.01%
MOOG INC 'B'	MOG/B	Aerospace/Defense	3720	-0.22	0.41	0.53	0.00	-1.04%	0.99%
Miller (Herman)	MLHR	Furn/Home	2500	-0.12	0.86	0.52	0.07	-0.14%	0.97%

		Furnishings							
Johnson Outdoors	JOUT	Recreation	7900	-0.24	0.73	0.52	0.06	-1.21%	0.97%
Monaco Coach	MCOAQ	Automotive	3710	-0.27	0.67	0.52	0.04	-1.45%	0.97%
Gulf Island Fabrication	GIFI	Oilfield Svcs/Equip.	3533	-0.42	0.59	0.52	0.08	-2.81%	0.97%
Office Depot	ODP	Office Equip/Supplies	3570	-0.48	0.34	0.52	0.02	-3.35%	0.97%
News Corp.	NWS	Entertainment	7950	-0.11	0.84	0.50	0.04	-0.08%	0.94%
Weston (George)	WN.TO	Retail/Wholesale Food	5400	-0.12	0.53	0.50	0.00	-0.19%	0.94%
Glentel Inc.	GLN.TO	Wireless Networking	7380	0.00	0.99	0.50	0.02	0.95%	0.94%
NACCO Inds. 'A'	NC	Diversified Co.	9913	-0.34	0.62	0.49	0.07	-2.13%	0.92%
Crane Co.	CR	Diversified Co.	9913	-0.05	0.79	0.48	0.00	0.48%	0.90%
FirstService Corp.	FSRV	Industrial Services	7300	-0.38	0.44	0.48	0.02	-2.49%	0.90%
Mine Safety Appliance	MSA	Machinery	3500	-0.47	0.47	0.48	0.06	-3.34%	0.90%
Oil-Dri Corp of Amer	ODC	Chemical (Specialty)	2820	-0.25	0.63	0.47	0.03	-1.35%	0.88%
Tenneco Inc.	TEN	Auto Parts	3716	-0.51	0.25	0.47	0.01	-3.66%	0.88%
Blount International Inc	BLT	Machinery	3500	-0.59	0.24	0.47	0.02	-4.47%	0.88%
Cont'l Materials Corp	CUO	Building Materials	3200	-1.04	0.08	0.47	0.04	-8.50%	0.88%
Flanigan's Enterprises Inc	BDL	Retail (Hardlines)	5999	-0.03	0.95	0.45	0.04	0.53%	0.84%
Genesco Inc.	GCO	Shoe	3140	-0.29	0.57	0.45	0.03	-1.77%	0.84%
CIBER Inc.	CBR	IT Services	7379	-0.32	0.51	0.44	0.03	-2.04%	0.82%

Loblaw Companies Limited	L.TO	Retail/Wholesale Food	5400	-0.10	0.76	0.43	0.01	-0.10%	0.80%
National Technical Systems	NTSC	Industrial Services	7300	-0.03	0.95	0.42	0.03	0.55%	0.79%
Park-Ohio	PKOH	Diversified Co.	9913	-0.29	0.50	0.41	0.02	-1.87%	0.77%
Ruddick Corp.	RDK	Retail/Wholesale Food	5400	-0.09	0.68	0.40	0.00	-0.07%	0.75%
Hitachi Ltd. ADR	HIT	Foreign Electronics	9975	-0.13	0.82	0.40	0.07	-0.38%	0.75%
Crawford & Co. 'B'	CRD/B	Financial Svcs. (Div.)	6100	-0.03	0.96	0.40	0.07	0.47%	0.75%
Steiner Leisure Ltd	STNR	Recreation	7900	-0.36	0.25	0.40	0.01	-2.52%	0.75%
Books-A-Million	BAMM	Retail (Hardlines)	5999	-0.16	0.72	0.39	0.04	-0.75%	0.73%
Safeway Inc.	SWY	Retail/Wholesale Food	5400	-0.46	0.44	0.39	0.09	-3.40%	0.73%
Kimball Int'l 'B'	KBALB	Furn/Home Furnishings	2500	-0.59	0.02	0.39	0.00	-4.56%	0.73%
Sara Lee Corp.	SLE	Food Processing	2000	-0.16	0.73	0.37	0.05	-0.79%	0.69%
AGCO Corp.	AGCO	Heavy Truck & Equip	3713	-0.20	0.69	0.37	0.07	-1.14%	0.69%
Dell Inc.	DELL	Computers/Peripherals	3573	-0.10	0.84	0.36	0.07	-0.21%	0.67%
CRAWFORD & CO 'A'	CRD/A	Financial Svcs. (Div.)	6100	-0.08	0.89	0.35	0.09	-0.01%	0.65%
Weis Markets	WMK	Retail/Wholesale	5400	-0.03	0.92	0.34	0.01	0.35%	0.64%

		Food							
Alamo Group	ALG	Machinery	3500	-0.17	0.66	0.34	0.04	-0.91%	0.64%
Laclede Group	LG	Natural Gas Utility	4920	-0.22	0.62	0.34	0.06	-1.32%	0.64%
Fred's Inc. 'A'	FRED	Retail Store	5300	-0.18	0.59	0.33	0.02	-1.01%	0.62%
Kroger Co.	KR	Retail/Wholesale Food	5400	-0.27	0.40	0.32	0.02	-1.87%	0.60%
URS Corp.	URS	Engineering & Const	1629	-0.05	0.84	0.31	0.01	0.09%	0.58%
Rush Enterprises Inc	RUSHB	Retail Automotive	5531	-0.04	0.93	0.31	0.08	0.22%	0.58%
SNC Lavalin Group Inc.	SNC.TO	Diversified Co.	9913	-0.09	0.85	0.31	0.09	-0.25%	0.58%
Rite Aid Corp.	RAD	Pharmacy Services	5910	-0.32	0.30	0.27	0.03	-2.37%	0.50%
Jabil Circuit	JBL	Electronics	3670	-0.45	0.13	0.27	0.02	-3.56%	0.50%
SUPERVALU INC.	SVU	Retail/Wholesale Food	5400	-0.10	0.67	0.26	0.01	-0.40%	0.49%
Cardinal Health	CAH	Med Supp Non-Invasive	3842	-0.25	0.22	0.26	0.01	-1.77%	0.49%
Lazare Kaplan International In	LKII	Retail (Hardlines)	5999	-0.10	0.75	0.24	0.05	-0.44%	0.45%
Casey's Gen'l Stores	CASY	Retail/Wholesale Food	5400	-0.03	0.94	0.22	0.09	0.18%	0.41%
Nash Finch Co.	NAFC	Retail/Wholesale	5400	-0.02	0.90	0.21	0.00	0.24%	0.39%

		Food							
Costco Wholesale	COST	Retail Store	5300	-0.01	0.96	0.19	0.00	0.32%	0.36%
Insight Enterprises	NSIT	Retail (Hardlines)	5999	-0.04	0.82	0.18	0.03	-0.05%	0.34%
United Natural Foods	UNFI	Retail/Wholesale Food	5400	-0.01	0.94	0.15	0.02	0.18%	0.28%
Aecon Group Inc	ARE.TO	Industrial Services	7300	-0.18	0.70	-0.51	0.02	-2.56%	-0.95%
Enbridge Energy Partners LLP	EEP	Pipeline MLPs	4619	-4.56	0.14	-2.21	0.06	-45.14%	-4.13%
Ciena Corp.	CIEN	Telecom. Equipment	4811	-1.23	0.91	-9.16	0.04	-28.01%	-17.13%